



**ASSESSING INFLUENCES ON PERCEIVED TRAINING TRANSFER: AN
INVESTIGATION OF PERCEPTIONS OF AIR FORCE LOGISTICS
READINESS OFFICER TECHNICAL SCHOOL GRADUATES**

THESIS

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AFIT/GLM/ENV/05M-1

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Abstract

Training transfer, which is the ability to utilize training back on the job, is an important issue for all organizations. Training transfer is also a concern within the Air Force, and specifically within the Logistics Readiness (LR) domain as the new LR career field and Logistics Readiness Officer (LRO) technical school mature. This research specifically investigates how influences/attitudes/beliefs of LRO technical school graduates regarding their training influence their perceptions about the transfer of such training back to the job. This study employs a survey-based methodology and the use of Structural Equation Modeling (SEM) for data analysis. The results of the research show that influences such as intrinsic incentives, organizational commitment, pretraining motivation, training reputation, subordinate/supervisor support, task constraints, and transfer enhancing activities have a significant relationship with training transfer. Not only does the research illuminate important influences on training transfer for the LRO, but it may also aid in directed efforts to improve and enhance the LRO technical school curriculum and experience. This research has also helped build support for existing theories of the influences on training transfer by expanding into a military context and by providing a unique opportunity to study such theories within a new training program scenario.

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Finally, I want to thank all the respondents of my survey, I cannot name them here, but they know who they are. I want them to know how important each of their responses was to this research. I sincerely hope my research will benefit the Logistics Readiness community.

Sarah E. Hobbs

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I. Introduction

Overview

Training transfer (i.e., the ability to apply what one has learned from training back to one's job) is an issue for many organizations, and the U.S. Air Force (USAF) is no exception. In order to better understand training transfer, it is important to start by first understanding the influences on training transfer. This chapter provides the background on issues important to the investigation of influences on training transfer. A new career field, Logistics Readiness (LR), and a new officer designation, the Logistics Readiness Officer (LRO), were established in 2002, and a new technical school was implemented. An opportunity, thus, has arisen in the USAF which will allow the influences on training transfer to be investigated within the context of the new LR career field. The context of this investigation will be in relation to the perceptions of these influences on training transfer by graduates of the USAF's LRO technical school. Background information concerning the creation of the new LR career field and the creation of the new technical school curriculum along with the problem statement, purpose, research question, methodology, and significance are included in this introduction chapter.

Background

Training transfer has been defined by multiple studies as the ability to apply what one has learned from training back to one's job (Facteau, Dobbins, Russell, Ladd, & Kudisch, 1995; Kanu, 2003; Machin & Fogarty, 2003). These studies have researched training transfer models using private sector samples. Examples include the study of management training for Tennessee State government employees (Facteau et al., 1995); leadership development training for Health Agencies in Vancouver, Canada (Kanu, 2003); and computer training at Queensland Police Service (Machin & Fogarty, 2003). Civilian organizations are not the only ones interested in research on training transfer. The military is facing similar challenges in understanding training transfer (Dyess, 2003).

A precursor to understanding training transfer is understanding, first, those areas that *influence* the transfer of training. A model of the influences on training transfer was explored in Facteau et al.'s research (1995). Focusing solely on training transfer without understanding the influences that are antecedents to it, leads to an incomplete understanding of the construct itself (Facteau et al., 1995). While there have been many studies on civilian training programs and the influences on training transfer, there are few studies on these same influences as viewed by military members attending training (e.g., Salas, Milham, & Bowers, 2003).

As such, this research will focus on investigating influences on training transfer using USAF officer technical school graduates, specifically the LRO technical school graduates. The Department of Defense (DoD), and in particular the USAF, relies heavily on technical schools to provide the initial training of career field specific knowledge needed to manage and understand one's career field (Thayer & Teachout, 1995). Air

Force Specialty Code (AFSC)-specific technical schools exist to ensure everyone in that AFSC has the opportunity to gain this same basic knowledge. Each career field has a technical school for both officers and enlisted members, and each one is different in its curriculum, length of school, and location. The technical school graduates addressed in this study are from the LRO technical school located at Lackland Air Force Base (AFB), TX. This technical school was created to support the new LR career field.

Creation of the LR career field

In 2002, the new LR career field was created to support Chief of Staff of the Air Force's new wing reorganization (Department of the Air Force, 2002b). The new combat wing organization is stated to posture the USAF to further enhance the way it produces and delivers air and space power (Department of the Air Force, 2002b). The new wing organizational structure standardizes operations across the USAF and enhances expeditionary capabilities.

Among the changes listed in the wing reorganization document, Program Action Directive (PAD) 02-05, was the merger of two squadrons (the Supply Squadron and Transportation Squadron) and a flight (Logistics Plans Flight) to form the Logistics Readiness Squadron (LRS) (Department of the Air Force, 2002b). The LRS is aligned under the Mission Support Group (MSG) and is one of the largest squadrons within the MSG. The organizational charts of the MSG and LRS are included in Appendix A. The LRS is responsible for overall direction of base logistics processes related to vehicles, cargo movement, passenger movement, personal property, supplies, equipment,

deployment planning and operations, fuels, and logistics plans (Barker, Skipper, Oliver, Johnstone, & Cornette, 2003).

Along with the wing reorganizations and merging of the squadrons listed above came a merger of three officer career fields into one. All (from second lieutenants to lieutenant colonel) Supply/Fuels, Transportation, and Logistics Plans officers were merged into the new LR career field. The new LR career field was formed to help integrate the spectrum of logistics processes within the operational, acquisition, and wholesale environments. The major logistics processes (i.e., the LRO core competencies) are distribution, material management, and contingency operations in support of USAF resources. LROs direct distribution operations, aerial port operations, vehicle management operations, material management operations, acquisition logistics activities, fuels management operations, and contingency operations (Barker et al., 2003). Due to the career field merger, the previously separate officer technical schools for Supply/Fuels, Transportation, and Logistics Plans were required to combine, and thus, the LRO technical school was established.

Birth of the LRO technical school/training curriculum

Prior to 2002, Supply/Fuels officers, Transportation officers, and Logistics Plans officers attended separate technical schools; each varying in length but all structured under the 345th Training Squadron, Lackland AFB, TX (Department of the Air Force, 2002a, 2003). In 2002, the LRO technical school was implemented as the new initial training for LROs. At the school, LROs are taught the fundamentals of the career field. The goal of the new LRO technical school is to provide “training to personnel in AFSC

21R1 (LR), in the knowledge and skills needed to perform the duties of LROs” (Department of the Air Force, 2003). When the career field curriculum managers set out to combine the three previously separate school programs, they made the decision to merge the three curricula into 64 academic days. Within those 64 academic days, the LRO curriculum is divided into five educational blocks, which cover specific areas of knowledge needed for the career field. Currently the curriculum consists of the following five blocks: Introduction to Logistics, Supply, Fuels, Transportation, and Logistics Plans. Attendance at the LRO technical school is required within six months after an active duty LRO arrives at his/her primary duty station. The technical school is also open to Air National Guard and Air Force Reserve members; however, this research focuses only on active duty LRO graduates (Department of the Air Force, 2002a, 2003).

LRO Training Evaluation

The LRO technical school is not currently assessing the effectiveness of the curriculum in any manner (LRO Course Training Manager, personal correspondence, July 1, 2004). More specifically, graduates are not required to complete an end-of-course survey regarding the training received at the LRO technical school. This leads to a lack of information pertaining to the perceptions of the graduates concerning the LRO technical school curriculum and how the training transfers to their jobs. As such, an opportunity exists for research that is aimed at capturing the perceptions of the graduates. The new LRO curriculum has been in place for two years. LRO technical school graduates provide a large population for evaluation. The evaluation will be conducted by surveying the graduates’ perceptions of influences on the transfer of LRO technical

school training back to their jobs. The LRO technical school and graduates provide a unique opportunity to study influences on training transfer within a military context and within a new training curriculum.

Problem Statement

Generally, there is a lack of understanding of the influences on training transfer within a military context (Dyess, 2003; Thayer & Teachout, 1995). These influences are an important part of understanding the construct of training transfer. Achieving proper training transfer is an issue across the USAF, and one that is specifically a concern with the new LR career field/technical school (Dyess, 2003). USAF senior leaders desire to have a professional work force. Initial technical training is the first step in developing such a force. Additionally, training personnel (i.e., trainers and curriculum developers) need to know if the current training program is effective in training LROs. The determination whether or not the training is effective is important because the technical school is the first line of formal career field education received, and the value lies in ensuring that a majority of the information is actually being transferred to the job. Finally, trainees need to feel confident the training provided to them will help them to better perform their jobs (Dyess, 2003).

Investigating training transfer is one way of assessing training effectiveness. Based on the literature, training transfer is a surrogate for training effectiveness which means that training transfer can be used in place of training effectiveness in research models (Cannon-Bowers, Salas, Tannenbaum, & Mathieu, 1995; Fecteau et al., 1995; Noe & Schmitt, 1986; Thayer & Teachout, 1995). Before a technical school can

effectively train students, it would be beneficial to understand the influences on training transfer.

Purpose and Research Question

The purpose of this research is to assess how influences/attitudes/beliefs of recent LRO technical school graduates regarding their training influence their perceptions about the transfer of such training back to their job. In order to achieve the stated purpose, the research must be narrowed to a specific question. The primary research question is to determine how trainees' general beliefs and attitudes about LRO training affect the transfer of training back to the trainee's job? By developing and testing an appropriate training transfer model, this research seeks to aid in increasing the understanding of the influences on training transfer.

Methodology

This study is quantitative in nature and employs a survey-based methodology and the use of Structural Equation Modeling (SEM) for data analysis. A survey is one method used to collect data on a wide range of observable constructs (Dillman, 2000). SEM is a common method used to study behavioral science topics, including training transfer, due to its ability to analyze unobserved variables (Byrne, 2001; Loehlin, 2004).

Significance

As USAF senior leaders attempt to determine what is best for the LROs in terms of training, a parallel method of determining what is best may be understanding the influences on training transfer (Dyess, 2003). The significance of this research is that it

may aid in better understanding the influences on training transfer within the military context of the new LRO technical school. With a better understanding of the influences, the LRO technical school can be provided with more precise information that focuses their efforts on the appropriate influences to aid in developing improved curricula, enhanced marketing of the schoolhouse, and a better understanding of the perceptions of incoming students. Empowered with this knowledge, senior leaders and LRO curriculum developers can continue to make educated decisions on the best methods for training LROs in the future.

Summary

This chapter introduced the proposed research and background on the problem to be researched. Chapter II will discuss the literature identified to support the research question and present the proposed training transfer model. Chapter III will discuss the methodology used to conduct the research. Chapter IV will discuss the results obtained from the research. Finally, a discussion of conclusions from the research and future research ideas will be presented in Chapter V.

II. Literature Review

Overview

This chapter provides a thorough review of the literature relevant training transfer studies and the constructs of pretraining motivation, training attitudes, prior job knowledge, organizational commitment, and support of learning and training transfer. Previous research will be presented to examine the relationships of the constructs listed above. Following an in depth review of the research literature, a theoretical research model and hypotheses will be proposed.

Perceived Training Transfer

The definition of training transfer used in this research is the ability to apply what one has learned from training back to one's job (Faction et al., 1995; Thayer & Teachout, 1995). Early literature by Baldwin and Ford (1988) reviewed multiple studies that researched the construct of training transfer and determined ways to measure how much training one has applied on the job. Later, in Kozlowski and Salas' research (1997) of multiple training transfer studies, it was demonstrated that there was a strong consensus that acquisition of knowledge, skills, behaviors, and attitudes through training was of little value if those new characteristics listed above were not maintained over time. In other words, learning was of little value to organizations unless it was transferred in some way to performance. The strong consensus among researchers presented by Kozlowski and Salas provided a basis for further study of the training transfer construct. A limited number of studies focus on the constructs that influence training transfer. A good reason to study the influences on training transfer stems from a study by Yamnill and McLean

(2001). This study suggests influences that could cause failures in the ability to transfer. They found certain influences such as inequities in training and poor training design that affect training transfer in a negative manner (Yamnill & McLean, 2001). It was proposed that once those negative influences were understood, then trainers could take the necessary precautions to prevent the negative influences. These findings by Yamnill and McLean provide a foundation for further investigating other constructs to determine the influences on training transfer.

Connections between Training Transfer and Training Effectiveness

The literature has shown links between the constructs of training transfer and training effectiveness (Alliger, Tannenbaum, Bennett, Traver, & Shotland, 1997; Cannon-Bowers et al., 1995; Salas et al., 2003). The more common connection has been to use training transfer in combination with other constructs such as pretraining motivation and other factors such as tests scores from evaluations given at the training, and evaluations scores from on the job, to form training effectiveness (Baldwin & Ford, 1988). However, the less common connection made in other studies was to use the term training transfer as a surrogate for training effectiveness (Facteau et al., 1995; Mathieu & Martineau, 1997; Mathieu, Tannenbaum, & Salas, 1992; Noe & Schmitt, 1986). In an empirical study by Blumenfeld and Holland (1971), the definition of training effectiveness was the “quality of the accountability evidence, specifically with the demonstration of the training” back to the job. This definition was similar to the definition of training transfer used in this study and cited in the previous section. Both definitions are very similar because both rely on demonstrating the training back on the

job and, given this similarity, this study will use training transfer as a surrogate for training effectiveness. A further study using MBA students by Gist, Bavetta, and Stevens (1990) suggests training transfer is a direct antecedent leading to training effectiveness. This study found that MBA students with measurably higher perceptions of training transfer were also categorized as describing the training received as effective (Gist et al., 1990). This antecedent relationship between higher training transfer and effective training was reported by Gist et al. as statistically significant (1990).

The explication of the connection between training transfer and training effectiveness is essential to the development of the proposed research model presented later in this chapter. Due to the connection between training transfer and training effectiveness, it is possible to use the same models from training effectiveness studies as well as the same influence on training effectiveness to study training transfer (Cannon-Bowers et al., 1995; Fecteau et al., 1995). Discussions of these models, which provided the foundation for this research, are included in the next section.

Background on Studies Relating to Training Transfer and Training Effectiveness

This section includes studies of models developed to better understand training transfer and training effectiveness. A review of the related literature begins with research by Kirkpatrick (1976). In his 1976 study, he researched the evolution of training and subsequently stated that training progresses through four levels.

The four levels of training are reaction, learning, behavior, and results. Reaction is defined as how well the trainee liked the training program. Learning is defined as facts and skills, which were understood and retained by the trainee. Behavior is defined as using those facts and skills learned on the job, i.e. job performance. Result is defined as outcomes that appear on the job as a result of training. (Kirkpatrick, 1976)

While he does not specifically mention training transfer or training effectiveness, his simple model (Figure 1) has widespread popularity among those who now study training transfer and training effectiveness. The widespread popularity of Kirkpatrick's model (Figure 1) was due to his four levels being the fundamental key elements considered when studying training. Kirkpatrick was considered an early specialist in training effectiveness and training transfer even though he did not use those terms because both terms were used as surrogates for the levels of results and behavior (Alliger & Janak, 1989).

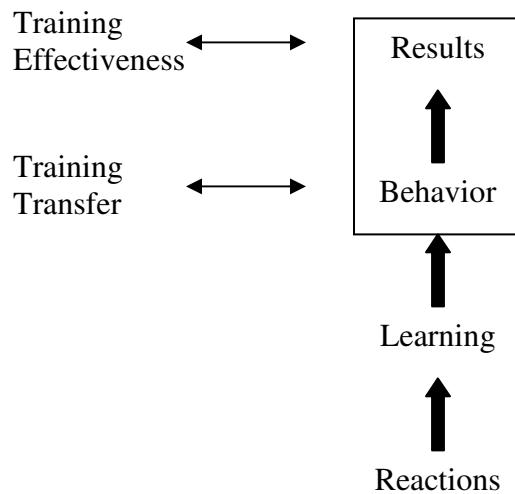


Figure 1. Kirkpatrick's Hierarchical Model of 4 Levels of Training Evolution (Alliger & Janak, 1989)

Today researchers are developing models more complicated than Kirkpatrick's model and developing new names for the four levels Kirkpatrick used. Fundamentally, the definitions of the four training levels remain very similar throughout the new models even though the names have changed. As described above, the behavior level (using facts and skills learned in training on the job) is analogous to training outcomes as used in

the Mathieu and Martineau model (Figure 2) and training transfer in the Fecteau et al. model (Figure 3). While the similarities with the Kirkpatrick model end there, each model given by Mathieu and Martineau and Fecteau et al. were founded on the studies done by Kirkpatrick. Both models (Figures 2 and 3), along with other studies by Noe and Schmitt (1986), have added constructs believed to have influence on the surrogates of training transfer, training effectiveness, or training outcomes. Noe and Schmitt (1986) discussed the need to look at trainee attitudes, motivation, and organizational support in relation to training effectiveness. Mathieu and Martineau expanded on Kirkpatrick's model by investigating influences that impact Kirkpatrick's four levels. Mathieu and Martineau (1997) renamed and combined the levels of reaction, learning, and behavior into the construct of training outcomes. The final Kirkpatrick level, results, was renamed work outcomes (Mathieu & Martineau, 1997). The influences they chose to include in their model (Figure 2) were individual characteristics, situation characteristics, and pretraining motivation. In this study, individual characteristics were defined as characteristics that arise within an individual and have some sort of influence on pretraining motivation (Mathieu & Martineau, 1997). Situational characteristics were defined as characteristics of the environment that interfere with or restrict one's performance (Mathieu, Martineau, & Tannenbaum, 1993). Pretraining motivation was defined as the level of motivation to train one has before they attend training (Mathieu & Martineau, 1997). Figure 2 pictorially demonstrates the relationships between the influences listed above and training outcomes. These influences were found to be statistically significant in their strength of the relationship with training outcomes. Those findings have given credibility to other researchers who want to include similar

influences or expand on the influences to find out more about training transfer (referred to as training outcomes by Mathieu and Martineau).

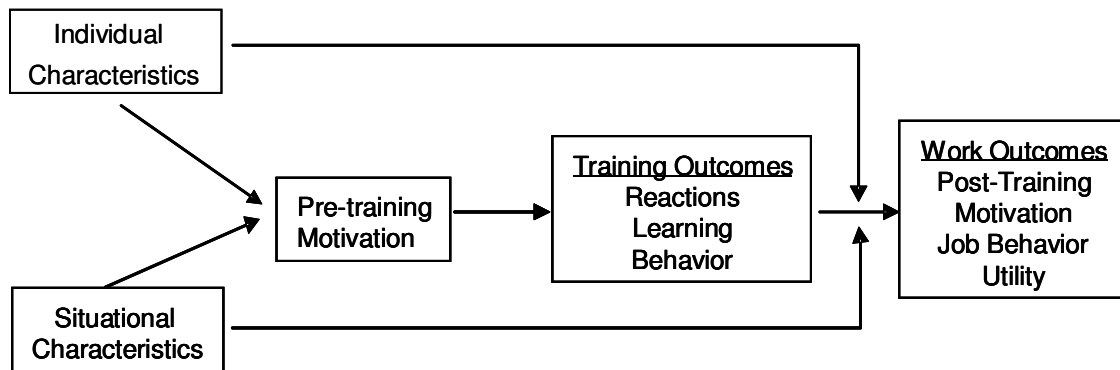


Figure 2. Mathieu and Martineau (1997) Conceptual Model

Another model which included influences similar to those used in the Mathieu and Martineau model was the Facticeau et al. model (Figure 3). The Facticeau et al. model most closely resembles the model used in this current research. Facticeau et al.'s model (1995) included even more influences than the Mathieu and Martineau model and renamed the training outcomes construct to training transfer. The model expanded the individual characteristics influences into career planning, career exploration, and organizational commitment (Facticeau et al., 1995). The model also expanded the situational characteristics influences into task constraints, subordinate support, supervisor support, peer support, and top management support (Facticeau et al., 1995). The pretraining motivation construct retained the same definition and position in the model as it did in the Mathieu and Martineau model. The finding from Facticeau et al.'s research concluded that a majority of the influences do have a strong relationship with training

transfer. The strong findings from Fecteau et al.'s empirical research provide a foundation for further investigation into including the influences shown in the model below and listed above in a model of training transfer. The empirical results for each construct used in this study are discussed in Chapter III in the Measures section.

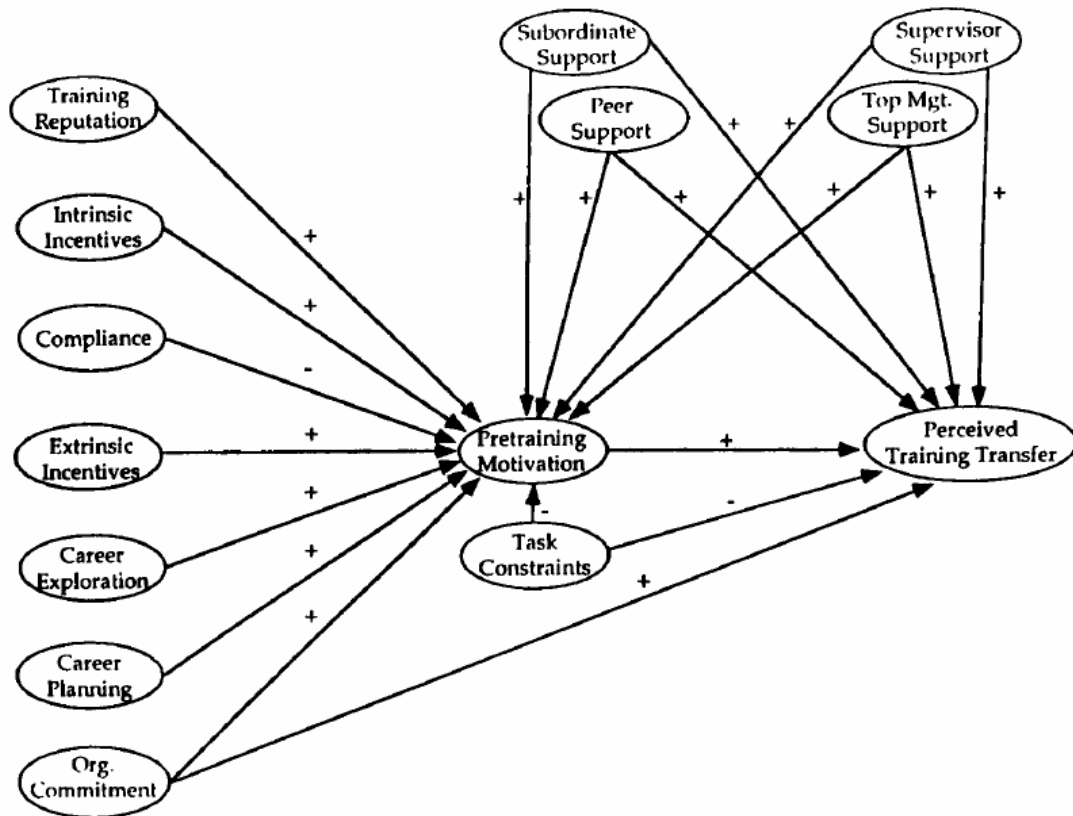


Figure 3. Fecteau et al.'s (1995) Hypothesized Model of Influences on Training Transfer

Finally, Thayer and Teachout's model (Figure 4) brought other constructs for investigation to training transfer and training effectiveness that were not considered in previous models. This researcher thought one of those new constructs, transfer enhancing activities, was important to include in this current study. Thayer and Teachout's model investigated the influence of the transfer enhancing activities construct

on training transfer. Transfer enhancing activities were defined as characteristics of training which may influence how effective the trainee perceives the training to be (Thayer & Teachout, 1995). While Thayer and Teachout also investigated other influences such as self-efficacy, learning, and climate for transfer, transfer enhancing activities was the only construct used in this study. The transfer enhancing activities construct was included because it impacted training transfer (Thayer & Teachout, 1995). The influence of transfer enhancing activities occurred during the training program itself (Thayer & Teachout, 1995). All the other influences in both Thayer and Teachout's model and those models listed earlier in the chapter only impact training transfer either before or after the actual training program has occurred. The transfer enhancing activities construct will be defined in greater detail later in the chapter.

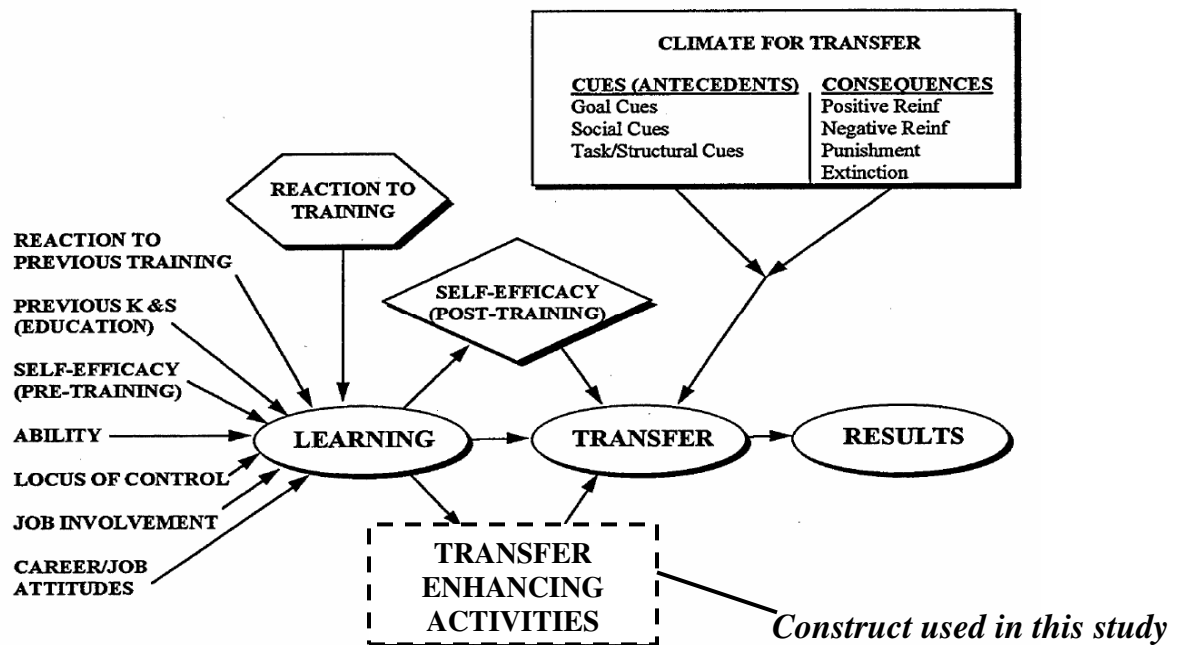


Figure 4. Thayer and Teachout's (1995) Training Transfer Model

Constructs Removed from Fecteau et al.'s Model for This Research

Although Fecteau et al.'s model was used as the foundation for this research, further investigation revealed that portions of the model were not applicable to the research at hand. The following paragraphs detail support for removal of a number of constructs.

Extrinsic Incentives

The construct of extrinsic incentives was defined as the extent to which training results in tangible external rewards such as promotions, pay raises, and higher performance evaluations (Fecteau et al., 1995). Results from Fecteau et al.'s study found that this construct was not significantly related to pretraining motivation. Along with the poor relationship with pretraining motivation, the questions pertaining to extrinsic incentives produced a Cronbach's alpha of .55 (Fecteau et al., 1995). This value is below the acceptable standard of .70 (Nunnally & Bernstein, 1994). Based on the lack of significance and unacceptable Cronbach's alpha, the construct of extrinsic incentives was not considered for this research.

Career Exploration and Career Planning

The definitions of the constructs career exploration and career planning were similar and thus grouped together for discussing the reasons for removal. The career exploration construct was defined as investigating various career options such as current job markets and possibilities for promotions (Fecteau et al., 1995). The career planning construct was defined as preparing for future career events like promotions or looking for a new job (Fecteau et al., 1995). Results from Fecteau et al.'s (1995) study found that

these two constructs were again not significantly related to pretraining motivation. This study by Fecteau et al. as well as two other studies (Mathieu et al., 1992; Noe & Schmitt, 1986) used the career planning scale developed by Gould in (1979) (as cited in Fecteau et al., 1995). These findings of the insignificant relationship between career exploration and career planning with pretraining motivation were consistent with the insignificant relationship findings of Noe and Schmitt, and Mathieu et al. in their respective studies. Additionally, both constructs from Fecteau et al.'s research had low Cronbach's alphas of .70 and .67 respectively (1995). These low Cronbach's alpha values, combined with the insignificant relationships detailed above, constituted removal of the constructs.

Peer Support and Top Management Support

Peer support and top management support constructs were defined as the extent to which peers or top management support the trainee through opportunities and reinforcement for practicing skills or using knowledge acquired in training (Fecteau et al., 1995). Fecteau et al.'s (1995) study found that peer support was not significantly related to pretraining motivation, and top management support was not significantly related to perceived training transfer. These findings along with the wording of the questions prompted this research to exclude both constructs from the model. Besides the insignificant relationships, the wording of the top management support questions did not seem appropriate to a military respondent because of implications of the rank structure of the military which is not found in the civilian/private sector (Allen, 2003; Thayer & Teachout, 1995). In Fecteau et al.'s research, the information which peer support construct elicited simply would not be appropriate for the military context. This was

because the question wording was aimed at respondents who would have had peers who attended the training which would not necessarily be the case for the respondents of this study. The peer support construct was unable to differentiate between support from peers who had attended the LRO technical school and those who had not attend.

Eleven constructs (including training transfer discussed earlier in the chapter) from Facticeau et al.'s research remain in the proposed research model of influences on training transfer. These constructs include pretraining motivation, training reputation, intrinsic incentives, compliance, prior job knowledge, organizational commitment, subordinate support, supervisor support, task constraints, and transfer enhancing activities. The following sections discuss each of those remaining ten constructs in depth.

Constructs Included in This Research

This research focuses on the ten specific influences listed below and how these influences relate to training transfer. Before the proposed research model is presented, each construct will be discussed based on a review of the literature.

Pretraining Motivation

Pretraining motivation construct was defined as the extent to which trainees were motivated to attend training and learn from the training prior to attending (Facticeau et al., 1995). Research by Tannenbaum, Mathieu, Salas, and Cannon-Bowers (1991) has shown that trainees who entered training with higher levels of motivation learned more and performed better than those who were less motivated. Thus, pretraining motivation was viewed as an important antecedent of training effectiveness. It was stated that efforts

should be made to heighten pretraining motivation in order to influence training outcomes such as training transfer (Fecteau et al., 1995). A recent effort by Colquitt, LePine, and Noe (2000) has brought forward underlying processes and variables involved in understanding pretraining motivation. They suggested that pretraining motivation was a multifaceted construct which was influenced by individual constructs (i.e., intrinsic incentives and organizational commitment) and situational characteristics (i.e., subordinate support, supervisor support, and task constraints) (Colquitt et al., 2000). The specific individual and situational characteristics used in this research are discussed later in this chapter.

Training Attitudes

A wide variety of training attitudes are thought to affect pretraining motivation and ultimately training transfer (Colquitt et al., 2000; Fecteau et al., 1995). For this research, a set of three training attitudes was chosen for their prevalence in civilian studies.

Training Reputation. The training reputation construct was defined as an expectation about the quality of the training course and the course's job relevance (Fecteau et al., 1995). Hicks and Klimoski (1987) studied the viewpoint of employees relating to expectations, attitudes, or decisions when it came to selecting training programs. The type of announcement or prior information individuals received about a training program impacted training reputation and affected motivation prior to entry (Hicks & Klimoski, 1987). "Employees who receive a realistic preview of a training program, one including a number of neutral and unfavorable statements, instead of a

brief, overly positive traditional announcement should be more motivated to learn and should get more from a training experience” (Hicks & Klimoski, 1987, p. 543-544). In a study of pilots attending training, it was shown that negative events, such as aircraft accidents and other safety mishaps, related to the perceptions of the training influenced the motivation to learn (Smith-Jentsch, Jentsch, Payne, & Salas, 1996). Research suggests that the manner in which an organization frames the training and the nature of the trainee’s previous experiences in training do influence pretraining motivation (Smith-Jentsch et al., 1996).

Intrinsic Incentives. The construct of intrinsic incentives was defined as the extent to which training meets internal needs or provides trainees with growth opportunities (Fecteau et al., 1995). Gist and Mitchell (1992) stated that internal cues allowed individuals to make judgments about anticipated performance in a training environment. These internal cues were linked to intrinsic incentives by supporting the judgmental call whether or not the training will aid in personal growth or lead to better opportunities to grow (Gist & Mitchell, 1992). Intrinsic incentives refer to the extent to which training meets or fulfills the expectations and desires of the trainees. Unmet expectations have been shown to be related to low intrinsic incentives and low motivation to train (Tannenbaum et al., 1991). Those with a positive belief in their ability to learn (i.e. they have intrinsic incentives) were more likely to be motivated to train (Tziner & Falbe, 1993). Trainees who believed in the value of training were more likely to apply skills learned in training (Baldwin & Ford, 1988).

Compliance. The definition of the compliance construct was the extent to which training was taken because it was mandated by the organization (Fecteau et al., 1995).

Hicks and Klimoski (1987) also studied a complementary idea called degree of choice, or how much opportunity employees have to select training opportunities based on their own needs and desires. For example, employees who were told they did not have a choice in going to training were less likely to conclude that any training was transferred to their job (Hicks & Klimoski, 1987). In addition, employees concluded that their participation in training did not have any implications for their future job training transfer (Hicks & Klimoski, 1987). The original measures for compliance from Fecteau et al.'s research were not comprehensive in that they did not allow for mandatory training scenarios. Given that LRO training scenario that is the focus of this research is mandatory, the compliance construct may have a different impact on the pretraining motivation construct as originally written by Fecteau et al. This construct, therefore, was not necessarily applicable as written and for those reasons listed, the construct of compliance was expanded to include questions that elicited perceptions about the training being mandatory.

Prior Job Knowledge

The construct of prior job knowledge was not included in any of the fundamental training transfer models discussed earlier in the chapter. This construct is a relatively new area of study within the topic of training and, more specifically, training transfer (Colquitt et al., 2000). The prior job knowledge construct was defined as the set of skills or knowledge that is already known prior to attending the training. Warr and Bunce (1995) identified that prior job knowledge may be a factor in influencing pretraining motivation and training transfer. Their research showed a positive relationship between

prior job knowledge and pretraining motivation. Warr and Bunce identified this relationship between prior job knowledge and pretraining motivation as needing further research. Ree, Carretta, and Teachout (1995) also performed research that included studying the relationship of prior job knowledge and training transfer. Results of the study indicated that prior job knowledge had little influence on subsequent job knowledge, but had direct influence on early work outcomes, which in turn influenced training transfer. The evidence of the indirect impact of prior job knowledge on training transfer provides good reason for including it in this study. A study by Smith-Jentsch, Jentsch, Payne, and Salas (1996) also examined effects of prior job knowledge on training transfer. Results indicated a linear relationship between prior job knowledge and training transfer. The study suggested that participants with prior job knowledge had more motivation to learn than participants without prior job knowledge (Smith-Jentsch et al., 1996). This research will continue to look at the relationship of prior job knowledge on training transfer but only through the mediating influence of pretraining motivation.

Organizational Commitment

The organizational commitment construct was defined as the relative strength of an individual's identification with and involvement in a particular organization (Porter & Smith, 1970 as cited in Fecteau et al., 1995). By using the same definition given by Porter and Smith for organizational commitment, Tannenbaum, Mathieu, Salas, and Cannon-Bowers (1991) linked organizational commitment to training transfer by studying how a trainee's level of organizational commitment influenced his/her view of training usefulness. "Trainees' organizational commitment levels are likely to predispose

them to view training as more or less useful, both to themselves and to the organization. When viewed this way, organizational commitment can be considered as an influence on pretraining motivation” (Tannenbaum et al., 1991, p. 760). Tracey et al. (1997) agreed that when defined in this manner; organizational commitment could positively influence pretraining motivation, in turn, influencing training transfer. Fecteau et al. (1995) looked at organizational commitment as an influence on pretraining motivation as well as training transfer. Their model found strong positive relationships between organizational commitment and both pretraining motivation and training transfer. Trainees in favorable organizational climates were more likely to apply new knowledge to work settings (Baldwin & Ford, 1988). Finally, Colquitt et al.’s (2000) review of multiple research studies suggested that higher levels of organizational commitment may cause the trainee to view training as useful to themselves and the organization.

Support for Learning and Training Transfer

This section identifies and describes four key support variables (subordinate support, supervisor support, task constraints, and transfer enhancing activities). These support variables are defined as being external influences on a trainee that stem from the work environment, the training itself, and interpersonal relationships such as with supervisors and subordinates. The literature portrays these variables as both influences directly on training transfer and indirectly on training transfer by way of pretraining motivation.

Subordinate and Supervisor Support. According to Noe (1986), a supportive subordinate and supportive supervisor would be ones which provided trainees with the

opportunities and reinforcement for practicing skills or for using knowledge acquired in training. Support from subordinates and supervisors has also been found to affect pretraining motivation (Baldwin & Ford, 1988; Wexley & Baldwin, 1986). If trainees believed that their subordinates or supervisors do not support them, they are less motivated to attend and learn from training (Baldwin & Ford, 1988; Wexley & Baldwin, 1986). The literature supports the idea that support comes from different sources such as supervisors and subordinates as well as reinforcing the idea that different sources can provide different influences (Facteau et al., 1995).

Task Constraints. Task constraints were defined as factors that may hamper a trainee's ability to apply new skills learned in training back to their job (Facteau et al., 1995; Peters & O'Connor, 1980). Factors in the work environment such as task constraints may enhance or inhibit transfer of training (Ford, Quinones, Sego, & Sorra, 1992). Peters and O'Connor (1980) studied situational resource variables and their influences on motivation and training transfer. Situational resource variables were analogous to task constraints. In many work situations, persons who were both willing and able to successfully accomplish a task may have been either inhibited in or prevented from doing so due to situational resource variables beyond their control (Peters & O'Connor, 1980). Peters and O'Connor identified eight situational resource variables relevant to job performance. These eight situational resource variables (i.e., task constraints) were job-related information, tools and equipment, materials and supplies, budgetary support, required services and help from others, task preparation, time availability, and work environment. The corresponding definitions for the eight variables

are given in Table 1. Each of the eight situational resource variables represents a measure of the task constraints construct used in this study.

Table 1. Situational Resource Variables Relevant to Performance (Peters & O'Connor, 1980)

| Situational Resource | Definition |
|--|--|
| Job-Related Information | The information (from supervisors, peers, subordinates, customers, company rules, policies, and procedures, etc.) needed to do the job assigned. |
| Tools and Equipment | The specific tools, equipment, and machinery needed to do the job assigned. |
| Materials and Supplies | The materials and supplies needed to do the job assigned. |
| Budgetary Support | The financial resources and budgetary support needed to do the job assigned—the monetary resources needed to accomplish aspects of the jobs, including such things as long distance calls, travel, job-related entertainment, hiring new and maintaining/retaining existing personnel, hiring emergency help, etc. This category does not refer to an incumbent's own salary, but rather to the monetary support necessary to accomplish tasks that are a part of the job. |
| Required Services and Help from Others | The services and help from others needed to do the job assigned. |
| Task Preparation | The personal preparation, through previous education, formal company training, and relevant job experience, needed to do the job assigned. |
| Time Availability | The availability of the time needed to do the job assigned, taking into consideration both the time limits imposed and the interruptions, unnecessary meetings, non-job-related distractions, etc. |
| Work Environment | The physical aspects of the immediate work environment needed to do the job assigned—characteristics that facilitate rather than interfere with doing the job assigned. A helpful work environment is one that is not too noisy, too cold, or too hot; that provides an appropriate work area; that is well-lighted; that is safe; and so forth. |

Furthermore, Tracey, Tannenbaum, and Kavanagh's (1995) research supports studying how task constraints influences trainee perceptions and behavior. They suggest that task constraints may have a direct effect on pretraining motivation. Trainees in a less supportive work environment, one that has a multitude of constraints, would be less

likely to acquire new knowledge gained from any means, formal training or otherwise (Tracey et al., 1995). Colquitt et al.'s (2000) review of training research found that task constraints may predict the extent to which trainee's transfer knowledge and skills back to the job. The review also revealed a positive relationship existed in several studies between the task constraints and the transfer of training to the job.

Transfer Enhancing Activities. There is another set of variables, which occur during training itself, that affect transfer and Thayer and Teachout (1995) have described these practices as transfer enhancing activities. The specific activities studied in this research are principles-meaningfulness, feedback cues, and relapse prevention. These activities were studied to understand the conditions affecting transfer once training is complete. Additional research by Machin and Fogarty (2003) expanded on the definitions of the three transfer enhancing activities originally investigated by Thayer and Teachout. The expanded definitions are listed below.

Principle-meaningfulness was defined as instruction that attempts to teach higher-order principles and to explain the reasons why things work the way they do. Feedback cues were a form of self-monitoring, wherein learners were taught to be aware of their own performance so that they know whether or not they were doing a task correctly. Relapse prevention training involved helping trainees to recognize situations that they may encounter after training that will hinder or prevent them from doing what they were trained to do. It also included making plans for how to overcome those situations. (Machin & Fogarty, 2003, p. 54)

In the following section, all 11 constructs discussed above and the proposed relationships between those constructs are included in the proposed research model.

Proposed Research Model

Each construct described above plays an important role as a variable in the proposed research model depicted in Figure 5. This model is based on previous research

and the models proposed by Kirkpatrick (1976) (Figure 1), Mathieu and Martineau (1997) (Figure 2), Fecteau et al. (1995) (Figure 3), and Thayer and Teachout (1995) (Figure 4). There are 11 variables in the model (Figure 5). Figure 5 also shows the proposed relationships depicted by arrows. Ten variables (training reputation, intrinsic incentives, compliance, prior job knowledge, organizational commitment, subordinate support, supervisor support, task constraints, transfer enhancing activities and pretraining motivation) were chosen to examine their influences on training transfer. Along with depicting the individual relationships between the 11 variables, the fit of the proposed model as a whole was also studied. The following section presents the hypotheses denoting the proposed relationships in order to answer the primary research question identified in Chapter I.

Based on research supporting the eleven variables selected for the study and the proposed research model, the following hypotheses are presented:

Hypothesis 1 -- Hypotheses to support relationships between training attitudes and pretraining motivation.

H1a: Training reputation will be positively related to pretraining motivation.

H1b: Intrinsic incentives will be positively related to pretraining motivation.

H1c: Compliance will be negatively related to pretraining motivation.

Hypothesis 2 -- Prior job knowledge will be positively related to pretraining motivation.

Hypothesis 3 -- Organizational commitment will be positively related to pretraining motivation.

Hypothesis 4 -- Organizational commitment will be positively related to perceived training transfer.

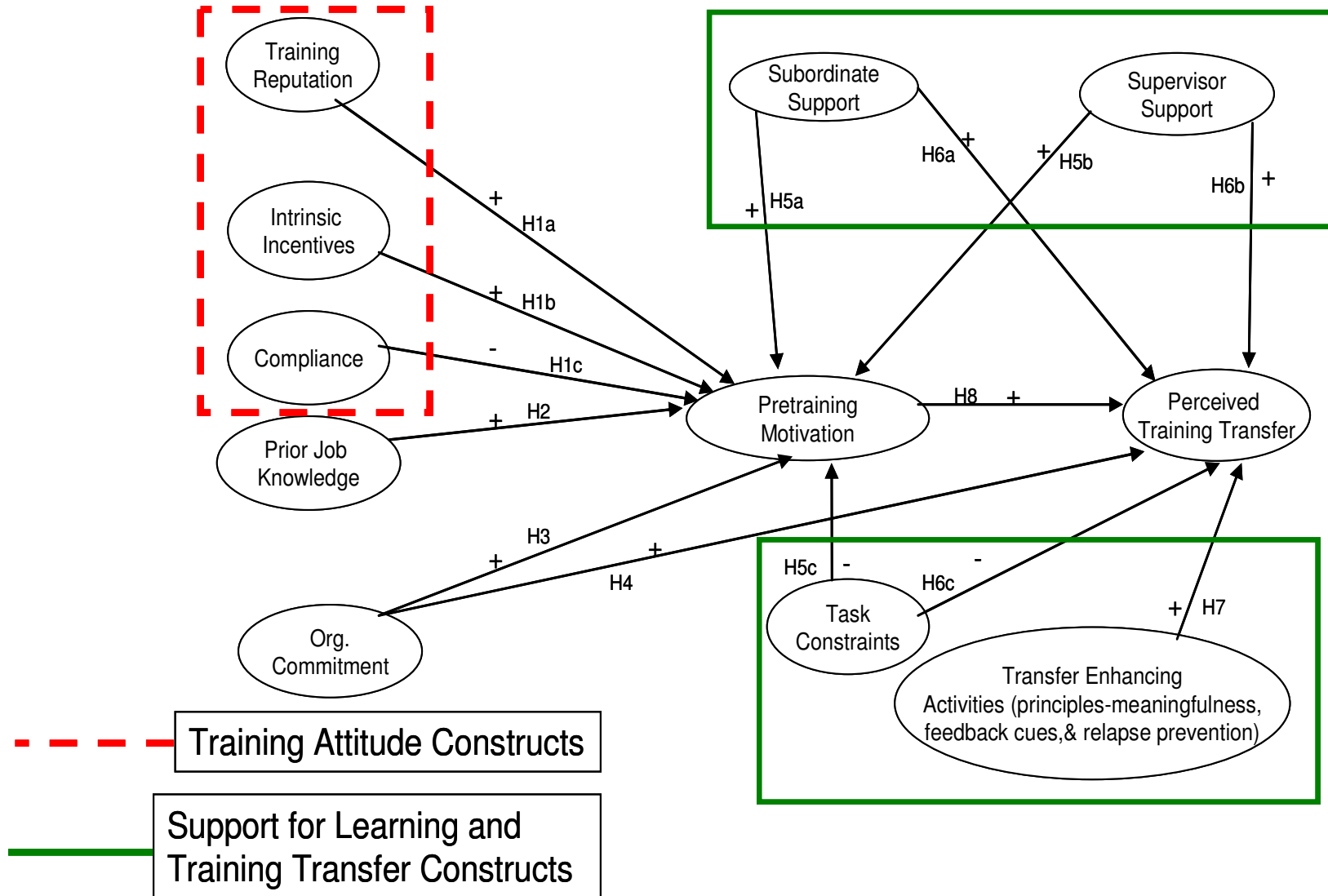


Figure 5. Proposed Research Model Depicting the Relationships of Influences on Perceived Training Transfer

Hypothesis 5 -- Hypotheses to support relationships between support of learning and pretraining motivation.

H5a: Subordinate support will be positively related to pretraining motivation.

H5b: Supervisor support will be positively related to pretraining motivation.

H5c: Task constraints will be negatively related to pretraining motivation.

Hypothesis 6 -- Hypotheses to support relationships between support for learning and perceived training transfer.

H6a: Subordinate support will be positively related to perceived training transfer.

H6b: Supervisor support will be positively related to perceived training transfer.

H6c: Task constraints will be negatively related to perceived training transfer.

Hypothesis 7 -- Transfer enhancing activities will be positively related to perceived training transfer.

Hypothesis 8 -- Pretraining motivation will be positively related to perceived training transfer.

Hypothesis 9 -- The model as shown with relationships given is a good fit

Training transfer models have repeatedly used pretraining motivation, training attitudes, organizational commitment, and support for learning and training transfer constructs to study the transfer of training. While variable antecedents may vary from study to study, the premise is the same; those constructs listed above may be strong indicators of a trainee's ability to transfer learned skills to the work environment.

Summary

Kirkpatrick (1976) laid the ground work for measuring training transfer and training effectiveness with his four-level model. Since then, a number of theoretical models have been developed that further explore training transfer and training effectiveness by investigating constructs which influence training transfer or training effectiveness. Specifically, Mathieu and Martineau's model (1997) incorporated the following influences, pretraining motivation, individual characteristics, and situational characteristics and then studied those influences effects on training outcomes. Fecteau et al.'s model (1995) studied the effect of the following influences, training attitudes, individual attitudes, and support for learning and training transfer, on training transfer. Finally, Thayer and Teachout's model (1995) explored the relationship between the influence of transfer enhancing activities and the construct of training transfer. This current study integrates these models to examine and hypothesize the relationships between certain constructs (i.e., pretraining motivation, training reputation, intrinsic incentives, compliance, prior job knowledge, organizational commitment, subordinate support, supervisor support, task constraints, and transfer enhancing activities) and training transfer which is defined by the trainee's ability to transfer skills learned to the job. This study attempts to develop a robust model used to study the influences on training transfer.

III. Methodology

Overview

This chapter describes the method and analysis used in this study of the influences on training transfer. The methodology was survey-based using Structural Equation Modeling (SEM) for data analysis. A survey is one method used to collect data on a wide range of observable constructs through a series of questions posed to a select set of participants (Dillman, 2000). SEM is a common method used to study behavioral science topics, including training transfer, due to its ability to analyze unobserved variables (Byrne, 2001; Loehlin, 2004). In this chapter, the sampling method is described followed by a review of the survey instrument and a discussion of the data collection procedures. Next, specific measures used to assess the constructs of the model are identified and validity and reliability issues are discussed.

Sample

The targeted participants selected for this study were USAF Logistics Readiness Officers (LRO) who attended the new LRO technical school at Lackland AFB, TX. Graduates included anyone who attended the new technical school between 2002 and 2004. This period of coverage leads to 600 graduates in the population. Coverage error can be a common problem in survey research and “results from every unit in the survey population not having a known chance of being included in the sample” (Dillman, 2000). In order to reduce coverage error in this study all members of the population were contacted (Dillman, 2000). The method chosen to contact all 600 graduates was through e-mail. All 600 graduates have e-mail addresses that were used to contact them and

thereby reducing coverage errors. The survey was directed at only active duty USAF officers even though AF Guard and Reserve members attend the LRO technical school as well. The names of graduates were collected from rosters of the LRO technical training provided by the Chief LRO instructor and AF Personnel Center career field managers. Participants consisted of company grade officers (second lieutenants, first lieutenants, and captains) and were assigned to 75 bases across eight Major Commands and in ten countries.

Instrument Review

This section discusses the design of the web-based survey used in this study, pilot testing, and modifications to specific survey questions.

Web-based surveys

Web-based surveys, while easy and economical to use, must still meet certain principles (Dillman, 2000). These design principles listed below were implemented to ensure efficient use of this survey instrument in this study's methodology. The design principles listed by Dillman (2000, pp. 377-385) and those used in this research are listed below:

- Introduce the web questionnaire with a welcome screen that is motivational, emphasizes the ease of responding, and instructs respondents about how to proceed to the next page.
- Present each question in a conventional format similar to that normally used on paper self-administered questionnaires.

- Restrain the use of color so that figure/ground consistency and readability are maintained, navigational flow is unimpeded, and measurement properties of questions are maintained.
- Avoid differences in the visual appearance of questions that result from different screen configurations, operating systems, browsers, partial screen displays, and wrap-around text.

The web-based survey questions were constructed in a fixed format with the goal of making the questionnaire appear the same for all respondents. This survey was constructed to allow visibility to all the questions in each section of the survey. Once finished with a section, the respondent could click the “Next” button to move forward in the survey. When designing a web-based survey, it is best to keep graphics and special functions simple thus making it more likely that all respondents can view the web survey. The web-based survey used for this research was built using the most common fonts and functions (i.e., HTML, radio buttons, and unlimited space to write for open-ended questions) available and used throughout the USAF. The survey was viewed on multiple computers to ensure the survey appeared the same way each time. Actual screen shots of the survey as well as a list of the instructions for each section of the survey are located in Appendices B and C.

Participants of this study responded to a single, online survey and the responses were anonymous. Respondents were not required to identify themselves, and thus, anonymity was maintained. For those respondents who chose to identify themselves, confidentiality was maintained by separating the identifying information from the survey question responses and keeping the information in different Excel spreadsheets. The

online survey allowed the researcher to reach LROs stationed overseas more efficiently than through mailing the survey. This survey included the ability to stop the survey and finish it at a later time without having to start over. Demographic information such as age, gender, education level, rank, Total Active Federal Military Service, Total Active Federal Commissioned Service and time-in-grade, were collected but not used to identify specific respondents. Along with designing a survey to account for the design principles mentioned above, a pilot test was conducted.

Pilot Test

After completing the design of the web-based survey, a sample of 11 LROs assigned to the Air Force Institute of Technology (AFIT) at Wright Patterson Air Force Base, Ohio, pilot tested the survey instrument. The 11 LROs from the pilot test were not members of the sample population used in this study because they did not attend the LRO technical school. The pilot study replicated the administration of the real web-based survey to the greatest extent possible by allowing the pilot study respondents to use the same website as used by the sample of LRO technical school graduates. In addition, the content of the e-mail messages which were sent to the AFIT LROs contained the same information as the e-mails sent to the pilot sample. The message included an Internet link to the survey as well as background information on the study. The pilot test was conducted for a 10-day period beginning 19 November 2004. At the conclusion of the test, seven LROs had completed the survey. The overall response rate for the pilot test was 63.63%. Pilot study participants were military members in the ranks of first

lieutenant and captain. With the pilot test complete, the seven respondents provided feedback to the researcher via email.

Survey Modifications

The feedback received from the pilot test was beneficial. After the pilot test, minor survey appearance problems were remedied and grammatical changes/clarifications were made to three questions. The appearance of the task constraint construct's instructions was modified to draw more attention to the change in the Likert scale to a frequency scale. The modifications included bolding the instructions and adding a note closer to the actual questions concerning the change in scale. Question 31 had a misspelled word corrected, and question 2 in the training reputation section was changed to include DoD training with examples. Finally, clarifications were made to questions 88 and 89 by adding the definitions of Total Active Federal Military Service and Total Active Federal Commissioned Service. All survey questions were modified as necessary to make use of AF equivalent terminology (for details see Appendix D). After the pilot test and survey modifications were completed, the procedures for taking the survey were determined.

Data Collection Procedures

Data collection commenced on 30 November 2004 and continued through 10 January 2005. E-mail messages were sent directly to the participants and provided them with the nature of the research and a link to the web address to access the survey. Reminder e-mails were also sent out at the halfway point in collection as well as two days before data collection ended. Copies of the e-mails are included in Appendix E. The lists

of LRO graduates' names were received at different times, so the initial e-mails requesting participants were sent out on different dates. The initial e-mail was sent on 30 November 2004 to the LROs listed on the technical school rosters. This list included 135 members of the sample. The rosters from AFPC were not received until three weeks later on 17 December 2004. At that time, the remaining sample population was e-mailed the link to the survey. Both groups of participants were sent the same initial e-mails, reminder e-mails, and the same survey-ending date of 10 January 2005. A total of 275 usable responses were received, representing a 45.8% response rate.

The survey taken by the participants was made up of 11 constructs (training reputation, intrinsic incentives, compliance, prior job knowledge, organizational commitment, pretraining motivation, perceived training transfer, subordinate support, supervisor support, transfer enhancing activities, and task constraints) and a set of questions designed to measure the given construct. The origins of the measures are listed in the following section.

Measures

The validity of a survey's measures is the extent to which the survey instrument measures what it is intended to measure (Leedy & Ormrod, 2005). In order to ensure the validity of this survey instrument, many of the constructs and questions used in this survey came from previously validated research. On the other hand, reliability of a survey's measures is the extent to which those measures yield consistent results (Leedy & Ormrod, 2005). In order to reduce potential errors associated with reliability, this research will rely on the internal consistency reliability estimate called Cronbach's alpha,

which measures the extent to which all the items within a single construct yield similar results (Leedy & Ormrod, 2005). A Cronbach's alpha value of greater than .70 is considered the acceptable standard (Nunnally & Bernstein, 1994). Each construct described below includes its respective Cronbach's alpha. Except where otherwise noted, all measurement responses were given using a 5-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (5) with *neutral* (3) as the midpoint. Appendices D and F summarize the 11 constructs' definitions, the original construct measuring questions, and the modified versions of each question used in this study. Descriptions of the specific modifications made are given in the subsequent sections for each of the 11 constructs.

The final survey used in this study included 91 questions (83 survey questions, 7 demographic questions, and 1 open-ended question). The demographic questions were used to characterize the respondents by different demographic groups such as gender, age groups, and rank. These demographic groups were used to provide context concerning the make up of the sample in conjunction with the survey results. The open-ended question asked, "If you have any final comments or concerns about LRO training or this survey, please write them in the space provided. If your comments relate to specific questions on this survey, please make a note of the question number beside your comment." This open-ended question allowed the LRO graduates the opportunity to share their views on training and the survey, and gave the researcher insight into future areas of study or focus. The following sections delve into a discussion of how of each the 11 constructs were measured.

Training Attitudes

Based on the literature and previous studies, three training attitudes were examined as influences on training transfer. Training attitudes were items that measure a trainee's attitude toward training prior to attending the training. The training attitudes included in this survey are training reputation, intrinsic incentives, and compliance.

Training Reputation. Training reputation was assessed with five items developed by Fecteau et al. (1995). Fecteau et al. administered the original scale with six items and reported a Cronbach's alpha of .87 and a standardized path coefficient of 0.32 $p < .05$, indicating a significant relationship between training reputation and pretraining motivation. The sixth item removed from this study stated, "I would recommend [insert organization name] training courses to my peers." This item was removed because the USAF requires all members to attend their respective technical school. Based on that fact, asking respondents to agree or disagree with the statement of recommending the course to their peers does not apply in this study. The items asked respondents to rate, "the overall quality of supervisory and managerial training courses and the extent to which these courses developed skills necessary for success as a supervisor or manager" (Fecteau et al., 1995, p. 9). Another study by Hicks and Klimoski (1987) found statistically significant results relating training reputation to pretraining motivation using questions similar to those written by Fecteau et al. A modification for the USAF training environment was needed for the training reputation items. Table 2 includes all the items used in this study for the training reputation measure as well as the Cronbach's alpha, mean, and standard deviation determined from the data.

Table 2. Statistics for Training Reputation Measure

| Item | α | M | SD |
|--|----------|------|------|
| <i>Training Reputation</i> | .76 | 3.44 | 0.69 |
| 1. The overall effectiveness of the LRO career field would increase if most supervisors and managers took this training course | | 3.28 | 1.04 |
| 2. I consider DoD training (e.g. PME such as ALS, NCOA, ASBC, SOS, etc.) to be of the highest quality. | | 3.55 | 0.87 |
| 3. LRO course trainers are very effective | | 3.72 | 0.85 |
| 4. LRO training courses are very useful | | 3.59 | 0.96 |
| 5. LRO training provides most of the skills critical for success in the LRO career field | | 3.05 | 1.09 |

n=275

Item number corresponds to question number on survey

Intrinsic Incentives. Intrinsic incentives were assessed with nine items also developed by Fecteau et al. (1995). That study reported a Cronbach's alpha of .90 and standardized path coefficient of .51 $p < .05$, indicating a significant relationship between intrinsic incentives and pretraining motivation. The intrinsic incentives construct measured the extent to which training met internal needs or provided trainees with growth opportunities. Table 3 includes all the items used in this study for the intrinsic incentives measure as well as the Cronbach's alpha, mean, and standard deviation determined from the data.

Table 3. Statistics for Intrinsic Incentives Measure

| Item | α | M | SD |
|---|----------|------|------|
| <i>Intrinsic Incentives</i> | .90 | 3.78 | 0.74 |
| 6. I attend training because it provides me with an opportunity to grow as a person. | | 3.78 | 1.06 |
| 7. I attend training because it allows me to assume greater management responsibilities. | | 3.95 | 0.91 |
| 8. I attend training because it enables me to become a more productive and efficient supervisor/manager. | | 4.09 | 0.82 |
| 9. I attend training because it enables me to be a better role model for my subordinates. | | 3.83 | 0.98 |
| 10. I attend training because the skills I learn in training help reduce my job-related stress. | | 3.40 | 1.10 |
| 11. I attend training because it provides me with a greater sense of self-worth. | | 3.22 | 1.14 |
| 12. I attend training because it provides me with skills that allow me to be more effective on the job. | | 4.21 | 0.80 |
| 13. I attend training because it allows me to correct difficulties I am having on the job. | | 3.63 | 1.03 |
| 14. I attend training because it provides me with an opportunity to interact with other managers and supervisors. | | 3.90 | 0.96 |

n=275

Item number corresponds to question number on survey

Compliance. Compliance was assessed with four items; two of which were written by Fecteau et al. (1995). The remaining two items were written specifically for this study by the researcher. The two questions from the Fecteau et al. study stated, “I attend training because it is required by my supervisor” and “I attend training because it is mandated by the Air Force,” and the two items reported a Cronbach’s alpha of .85. In order for the respondents to provide more feedback beyond answering the first two questions listed above concerning the extent to which they agree that the training is mandatory, more questions were required. The remaining two items of this measure were developed based on the fact that the LRO technical school and all USAF technical schools are mandatory and that the previous two items written by Fecteau et al. did not

allow for mandatory training scenarios. A modification for the USAF training environment was needed for these items. Table 4 includes all the items used in this study for the compliance measure as well as the Cronbach's alpha, mean, and standard deviation determined from the data.

Table 4. Statistics for Compliance Measure

| Item | α | M | SD |
|--|----------|------|------|
| <i>Compliance</i> | .64 | 3.87 | 0.73 |
| 15. I attend training because it is required by my supervisor. | | 3.43 | 1.21 |
| 16. I attend training because it is mandated by the Air Force. | | 3.91 | 1.10 |
| 17. I feel LRO training should be mandatory. | | 4.17 | 0.95 |
| 18. I feel that mandatory training is a good thing. | | 3.95 | 0.96 |

n=275

Item number corresponds to question number on survey

Organizational Commitment

Organizational commitment was assessed with four items developed by Porter and Smith in their 1970 study (as cited in Fecteau et al., 1995). In a study by Tannenbaum et al. (1991), a full scale of 11 items measuring organizational commitment demonstrated high reliability with a Cronbach's alpha of .83. Fecteau et al., using Porter and Smith's four questions, reported an internal consistency reliability estimate of .80 and a standardized path coefficient of .15 $p < .05$, indicating a significant relationship between organizational commitment and pretraining motivation. A modification for the USAF training environment was needed for these items. Table 6 includes all the items used in this study for the organizational commitment measure as well as the Cronbach's alpha, mean, and standard deviation determined from the data.

Table 5. Statistics for Organizational Commitment Measure

| Item | α | M | SD |
|---|----------|------|------|
| <i>Organizational Commitment</i> | .86 | 4.15 | 0.77 |
| 19. I am willing to put in a great deal of effort beyond that normally expected in order to help the Air Force be successful. | | 4.43 | 0.72 |
| 20. I “talk up” the Air Force to my friends as a great organization to work for. | | 4.17 | 0.93 |
| 21. I find that my values and the Air Force’s values are very similar. | | 4.19 | 0.88 |
| 22. For me, the Air Force is the best of all possible organizations to work for. | | 3.80 | 1.10 |

n=275

Item number corresponds to question number on survey

Pretraining Motivation

Pretraining motivation was assessed with nine items drawn from several scales used in previous research (Baldwin & Karl, 1987; Hicks & Klimoski, 1987; Noe & Schmitt, 1986). The items, “I try to learn as much as I can from training programs” and “I get really involved in learning the material presented in training courses” are similar to items used by both Noe and Schmitt and Hicks and Klimoski. Noe and Schmitt reported a Cronbach’s alpha of .98 for the construct of pretraining motivation in their study. Hicks and Klimoski reported a Cronbach’s alpha of .88 for their construct of pretraining motivation. When Fecteau et al. administered their nine item scale for pretraining motivation, they reported a Cronbach’s alpha of .71 and a standardized path coefficient of .35 $p < .05$, indicating a significant relationship between pretraining motivation and perceived training transfer. Table 7 includes all the items used in this study for the pretraining motivation measure as well as the Cronbach’s alpha, mean, and standard deviation determined from the data.

Table 6. Statistics for Pretraining Motivation Measure

| Item | α | M | SD |
|---|----------|------|------|
| <i>Pretraining Motivation</i> | .87 | 4.15 | 0.53 |
| 37. If I have trouble understanding the material presented in a training program, I try harder. | | 4.18 | 0.79 |
| 38. I get more out of training programs than most of my peers. | | 3.42 | 0.87 |
| 39. I look forward to actively participating in training programs. | | 4.00 | 0.84 |
| 40. The opportunity to acquire new skills appeals to me. | | 4.49 | 0.55 |
| 41. I try to learn as much as I can from training programs. | | 4.41 | 0.59 |
| 42. I make a special effort to complete all course assignments during training courses. | | 4.34 | 0.68 |
| 43. I get really involved in learning the material presented in training courses. | | 4.10 | 0.77 |
| 44. I use my own time to prepare for training courses by reading, practicing skills, completing assignments, etc. | | 4.01 | 0.92 |
| 45. Doing well in training programs is important to me. | | 4.41 | 0.71 |

n=275

Item number corresponds to question number on survey

Perceived Training Transfer

Perceived training transfer was assessed with nine items developed by Fecteau et al. (1995) and were based upon a review by Fecteau et al. of the relevant literature (Noe & Schmitt, 1986; Tziner, Haccoun, & Kadish, 1991; Wexley & Baldwin, 1986). Research by Fecteau et al. found the items to have a Cronbach's alpha of .87. A modification for the USAF training environment was needed for these items. Table 8 includes all the items used in this study for the perceived training transfer measure as well as the Cronbach's alpha, mean, and standard deviation determined from the data.

Table 7. Statistics for Perceived Training Transfer Measure

| Item | α | M | SD |
|---|----------|------|------|
| <i>Perceived Training Transfer</i> | .92 | 2.85 | 0.73 |
| 46. I am able to transfer the skills learned in LRO training courses back to my actual job. | | 3.52 | 1.00 |
| 47. Supervisors, peers, or subordinates have told me that my job behavior has improved following the LRO training course. | | 2.89 | 0.92 |
| 48. I have changed my job behavior in order to be consistent with material taught in the LRO training course. | | 2.99 | 1.00 |
| 49. My actual job performance has improved due to the skills that I learned in the LRO training course. | | 3.32 | 1.02 |
| 50. The productivity of my subordinates has improved due to the skills that I learned in the LRO training course. | | 2.88 | 0.95 |
| 51. Absenteeism in my group has decreased due to the skills that I developed in the LRO training course. | | 2.48 | 0.83 |
| 52. Turnover in my group has decreased due to the skills that I developed in the LRO training course. | | 2.44 | 0.83 |
| 53. Morale of my work group is higher due to the skills that I developed in the LRO training course. | | 2.64 | 0.88 |
| 54. My subordinates are more committed to the mission of the Air Force and logistics due to the skills that I developed in the LRO training course. | | 2.53 | 0.90 |

n=275

Item number corresponds to question number on survey

Support for Learning and Training Transfer

The social support for learning and training transfer constructs were portrayed by the literature as a being made up of four constructs (subordinate support, supervisor support, transfer enhancing activities, and task constraints) (Facteau et al., 1995; Thayer & Teachout, 1995). The extent to which these four different constructs were supportive of or hindered individual's training transfer was measured. Overall, the survey questions from this area assessed the extent to which the four constructs

(1) provided opportunities for the respondents to utilize trained skills; (2) were supportive of the respondents' efforts to apply trained skills back on the job (e.g., were tolerant of mistakes); and (3) reinforced respondents' efforts to transfer skills to their job. (Facteau et al., 1995, p. 10)

Subordinate Support. Subordinate support was assessed with four items developed by Fecteau et al. (1995). Fecteau et al. (1995) administered the scale and reported a Cronbach's alpha of .77. A modification for the USAF training environment was needed for these items. Table 9 includes all the items used in this study for the subordinate support measure as well as the Cronbach's alpha, mean, and standard deviation determined from the data.

Table 8. Statistics for Subordinate Support Measure

| Item | α | M | SD |
|--|----------|------|------|
| <i>Subordinate Support</i> | .82 | 3.57 | 0.77 |
| 23. My subordinates allow me to get accustomed to using my new LRO training skills on the job. | | 3.69 | 0.92 |
| 24. My subordinates accept me making mistakes on the job as a necessary part of my trying out new LRO training skills. | | 3.72 | 0.96 |
| 25. My subordinates offer me constructive feedback when I use new skills and behaviors learned in LRO training. | | 3.60 | 0.97 |
| 26. My subordinates believe that LRO training is an important use of my time. | | 3.26 | 0.94 |

n=275

Item number corresponds to question number on survey

Supervisor Support. Supervisor support was assessed with ten items developed by Fecteau et al. (1995). This construct was developed at the same time and in a similar manner as the subordinate support construct. The research by Fecteau et al. (1995) reported a Cronbach's alpha of .90. A modification for the USAF training environment was needed for these items. Table 10 includes all the items used in this study for the supervisor support measure as well as the Cronbach's alpha, mean, and standard deviation determined from the data.

Table 9. Statistics for Supervisor Support Measure

| Item | α | M | SD |
|--|----------|------|------|
| <i>Supervisor Support</i> | .91 | 3.37 | 0.74 |
| 27. My supervisor helps me when I ask him/her for advice about how to use the skills taught in LRO training. | | 3.74 | 0.97 |
| 28. My supervisor is tolerant of changes that I initiate as a result of learning new LRO training skills. | | 3.59 | 0.95 |
| 29. My supervisor offers me opportunities to use new skills I learned in LRO training. | | 3.74 | 0.94 |
| 30. My supervisor gives me constructive feedback when I try out new skills or behaviors learned in LRO training. | | 3.60 | 1.00 |
| 31. My supervisor rewards me for using new skills on the job that I learned in LRO training. | | 3.19 | 1.00 |
| 32. My supervisor believes that LRO training is important and s/he attends relevant courses. | | 3.64 | 0.95 |
| 33. My supervisor actively practices those skills taught in LRO training courses. | | 3.39 | 0.91 |
| 34. My supervisor meets with me before I attend LRO training to set goals for my performance after training. | | 2.57 | 1.08 |
| 35. My supervisor meets with me after completing LRO training to discuss how I can use my new training skills. | | 2.70 | 1.13 |
| 36. My supervisor would still allow me to attend LRO training as scheduled if a last minute crisis arose. | | 3.52 | 1.03 |

n=275

Item number corresponds to question number on survey

Transfer Enhancing Activities. Transfer enhancing activities were assessed with 17 items developed by Thayer and Teachout (1995) based on J.Z. Rouiller's 1989 self-control cues (as cited in Thayer & Teachout, 1995). The 17 questions were composed of activities which emphasized events occurring during the training and have influence on training transfer. The three activities were a) principles-meaningfulness, b) cues to monitor own performance (feedback cues), and c) relapse prevention. The activities were taken from the Transfer Enhancing Activities Questionnaire (TEAQ) (Thayer & Teachout, 1995). Other research influenced the development of the questions in the areas of relapse prevention and principles-meaningfulness (Baldwin & Ford, 1988; Gist,

Stevens, & Bavetta, 1991; Tziner et al., 1991; Wexley & Baldwin, 1986). Those three activities listed previously were combined to form one construct of transfer enhancing activities. A modification for the USAF training environment was needed for these items. Table 11 includes all the items used in this study for the transfer enhancing activities measure as well as the Cronbach's alpha, mean, and standard deviation determined from the data.

Table 10. Statistics for Transfer Enhancing Activities Measure

| Item | α | M | SD |
|--|----------|------|------|
| <i>Transfer Enhancing Activities</i> | .84 | 3.29 | 0.52 |
| 55. During LRO training, the instructors explained why things worked the way they did. | | 3.74 | 0.90 |
| 56. During LRO training, the instructors explained why it was necessary to do things a certain way. | | 3.74 | 0.87 |
| 57. During LRO training, the instructors never told us why, just told us to do it. (R) | | 3.82 | 0.93 |
| 58. The LRO training we received really made things clear as to why things worked the way they did. | | 3.27 | 0.98 |
| 59. During LRO training, the instructors taught us things to look for to make sure we were doing the job correctly. | | 3.62 | 0.84 |
| 60. During LRO training, the instructors taught us check-points so that we could be sure we were doing the job correctly. | | 3.29 | 0.95 |
| 61. It would have helped us to remember things in LRO training if the instructors had given us some memory aids, such as check lists, color-coded diagrams, etc. | | 3.56 | 1.02 |
| 62. Job aids are available on the job to support what LROs learned in technical school. | | 3.01 | 1.05 |
| 63. During LRO training, we couldn't tell whether or not we made mistakes. (R) | | 3.58 | 0.85 |
| 64. During LRO training, we were taught how to recognize our mistakes as we made them. | | 3.16 | 0.90 |
| 65. During LRO training, the instructors discussed the possibility of no supervisory support for our training when we were on the job. (R) | | 2.92 | 1.04 |
| 66. During LRO training, we talked about situations that might prevent us from using our new skills and ways to deal with those situations. | | 2.97 | 1.00 |

| | | | |
|-----|---|------|------|
| 67. | During LRO training, we talked about what to do if people at our duty station told us to do the job in a different way. | 3.14 | 1.03 |
| 68. | During LRO training, we discussed problems we might encounter at our duty station when we first used LRO training. | 3.19 | 1.02 |
| 69. | During LRO training, we discussed how other LROs attitudes toward the technical school might affect our job performance. | 2.92 | 1.08 |
| 70. | During LRO training, we discussed how our supervisor's attitudes toward our training might affect our job performance. | 2.93 | 1.06 |
| 71. | During LRO training, we talked about how to develop good work habits, so we would remember what we were taught when we were on the job. | 3.06 | 1.05 |

n=275

(R) indicates item is reverse scored

Item number corresponds to question number on survey

Task Constraints. The task constraints construct was assessed with ten items based on Peters and O'Conner's (1980) taxonomy of the situational resource variables that may constrain individual performance. The questions for the task constraints construct were developed by Fecteau et al. (1995). The task constraint construct needed to quantify the number of times a task constraint occurred that may have hindered training transfer. The 5-point Likert scale used to measure the other constructs is not sufficient. Task constraints were measured using a frequency scale anchored by Never (5) and Almost Always (1), with Occasionally (3) as midpoint. This scale was used to indicate how often the factors hampered the ability to apply new skills. The Cronbach's alpha reported by Fecteau et al. (1995) was .85. Table 12 includes all the items used in this study for the task constraints measure as well as the Cronbach's alpha, mean, and standard deviation determined from the data.

Table 11. Statistics for Task Constraints Measure

| Item | α | M | SD |
|--|----------|------|------|
| <i>Task Constraints</i> | .90 | 3.36 | 0.79 |
| 72. Unclear task assignments or instructions. | | 3.15 | 0.92 |
| 73. Lack of necessary tools, equipment, mechanical devices and/or material aids. | | 3.44 | 0.95 |
| 74. Inability to obtain the raw materials, parts, or supplies. | | 3.45 | 1.02 |
| 75. Inadequate financial resources. | | 3.18 | 1.25 |
| 76. Insufficient personnel. | | 2.90 | 1.24 |
| 77. Uncooperative coworkers and/or poor relationships between people in different departments/divisions. | | 3.37 | 1.15 |
| 78. Insufficient time to produce the quality or quantity of work required. | | 3.24 | 1.13 |
| 79. Poor environmental conditions (e.g., cold, hot, noisy, frequent interruptions). | | 3.64 | 1.01 |
| 80. Uncooperative supervisor or productivity pressures from your supervisor. | | 3.68 | 1.08 |
| 81. Inabilities of subordinates or coworkers to take on additional work or responsibilities. | | 3.51 | 1.04 |

n=275

Item number corresponds to question number on survey

Prior Job Knowledge

Prior job knowledge was assessed with two items written specifically for this research. These questions did not use the 5-point Likert scale as did the other measures. The answers to both items were given in years and months. The data was converted to years for analysis. For example, if a response was listed as 12 years and 6 months, then it was converted to 12.5 years for data analysis purposes. The questions required respondents to identify the amount of experience they had in logistics both in a civilian and/or military capacity. Even though this survey was given to military members, it was important to include any experience individuals might have had in a civilian capacity, as it was needed for the construct of prior job knowledge. Table 5 includes all the items

used in this study for the prior job knowledge measure as well as the Cronbach's alpha, mean, and standard deviation determined from the data.

Table 12. Statistics for Prior Job Knowledge Measure

| Item | α | M | SD |
|--|----------|------|------|
| <i>Prior Job Knowledge</i> | .12 | 3.73 | 3.89 |
| 82. How many years of experience specific to logistics have you had in a civilian capacity? _____ yrs _____ months | | 0.35 | 1.41 |
| 83. How many years of experience specific to logistics have you had in a military capacity? _____ yrs _____ months | | 3.38 | 3.50 |

n=275

Item number corresponds to question number on survey

After the in-depth examination of the origins of the measures, the procedure for analyzing the data was determined.

Data Analysis

As stated previously, the goal of this research is to examine the relationships of influences on perceived training transfer as proposed in the research model (Figure 4). In order to examine these relationships as well as the fit of the model as a whole, Structural Equation Modeling (SEM) procedures were used for the data analysis. Several aspects of SEM set it apart from the other multivariate procedures.

First, SEM takes a confirmatory, rather than an exploratory, approach to the data analysis. SEM lends itself well to the analysis of data for inferential purposes. By contrast, most other multivariate procedures are essentially descriptive by nature, so that hypothesis testing is difficult. Second, although traditional multivariate procedures are incapable of either assessing or correcting for measurement error, SEM provides explicit estimates of these error variance parameters. Indeed, alternative methods (e.g., those rooted in regression, or the general linear model) assume that error(s) in the independent variables vanishes. Thus, applying those methods when there is error in the independent variables is practically the same as ignoring the error, which may lead to serious inaccuracies. Such mistakes are avoided when SEM is used. Third, although data analyses using the former methods are based on observed measurements only, those using SEM procedures can incorporate both unobserved (i.e., latent) and observed variables. (Byrne, 2001, pp. 3-4)

Analysis of Moment Structures (AMOS) was the specific computer software chosen to run the SEM analysis. AMOS was chosen for its flexibility and powerful graphic interface. With AMOS, a model can be quickly specified, viewed, and modified graphically using simple drawing tools (Arbuckle, 1999). Based on articles written by Kline (1998) and von Eye and Fuller (2003), AMOS is comparable with any other SEM software in its ability to handle large models and provide numerous goodness-of-fit indices.

Overall, SEM allows for the examination of the strength of the relationships between the nine independent variables (training reputation, intrinsic incentives, compliance, organizational commitment, prior job knowledge, subordinate support, supervisor support, task constraints, and transfer enhancing activities) and the two dependent variables (pretraining motivation and perceived training transfer), while considering all of the paths in a model. In order to answer the research question posed in Chapter I and the first eight hypotheses listed in Chapter II, each relationship within the proposed research model (denoted by arrows in Figure 5) will be examined for statistical significance and the strength of the relationship as indicated by the regression weights and critical ratios given by the AMOS output file. Regression weight values greater than .05 and also statistically significant are considered strong relationships (Byrne, 2001; Loehlin, 2004). If a value is not statistically significant, then the associated relationship is not valid for the model (Byrne, 2001; Loehlin, 2004).

The final hypothesis given in Chapter II, Hypothesis 9, will be investigated by finding the fit of the model as whole. The fit of the model will be assessed based on the goodness-of-fit indices outlined in Table 13.

Table 13. Goodness-of-Fit Statistics

| Measure | Indication of Good Fit |
|-------------------------|------------------------|
| p -value (χ^2) | > .05 |
| GFI | > .90 |
| CFI | > .90 |
| RMSEA | < .10 |
| p -value (RMSEA) | > .50 |

The first type of fit classification assessed was that of absolute fit and there are two tests in this category. The chi-square statistic is a measure of absolute fit. It indicates if there is a perfect model fit for the population by comparing the goodness-of-fit between the covariance matrix for the observed data and covariance matrix derived from the research model (Fornell & Larcker, 1981). Chi-square (χ^2) is used when testing the null hypothesis that the model fits the analyzed covariance matrix perfectly. Based on the results of a χ^2 , one can “reject a model when its p -value is smaller than the preset significance value (e.g., .05), and retain the model if this value is higher than the preset significance” (Raykov & Marcoulides, 2000, p. 36). A statistically non-significant χ^2 ($p > .05$) is favorable and indicates a good model fit (Byrne, 2001). However, χ^2 is sensitive to sample size, in that as the sample size increases, smaller differences are detected. With large sample sizes, the χ^2 value may lead to a rejection of the model when in fact the fit is acceptable (Loehlin, 2004). Loehlin (2004) recommended at least 100 respondents with 10-15 constructs but preferred 200 respondents. When a model contains ten or more constructs, a sample size under 200 generally meant parameter estimates were unstable and significance tests lacked power (Loehlin, 2004). This researcher received 275 responses, exceeding Loehlin’s threshold of 200 but it is close to

the limit, 300 responses, for being too large for the χ^2 statistic (2004). Therefore, several other goodness-of-fit indices were also examined.

Another measure of absolute fit was the goodness-of-fit index (GFI). The GFI, as defined by Loehlin (2004), compares the proposed model to the perfect model, in which each construct is perfectly related to all of the other constructs. Furthermore, the GFI estimates a measure of the proportion of variance and covariance that the model was able to explain. GFI values range from 0 to 1, with a value greater than .90 indicating a good fit (Raykov & Marcoulides, 2000).

A second classification of goodness-of-fit indices addresses model parsimony. Parsimony refers to the number of unknowns used to achieve the fit of the specified model (Schumacker & Lomax, 1996). This classification includes the Root Mean Square Error of Approximation (RMSEA) because it does not require specification of a baseline model (Loehlin, 2004). The RMSEA is an indication of parsimony and is a population-based index, which means that it is relatively insensitive to sample size. RMSEA values less than .10 are considered good, while values less than .05 are considered very good (Byrne, 2001; Loehlin, 2004).

The final indication of goodness-of-fit was the comparative fit index (CFI), which considers the relative fit of the model with respect to the null model, in which none of the constructs are related at all. CFI values range from 0 to 1, with a value greater than .90 indicating a good fit (Raykov & Marcoulides, 2000). Values for each of these indices were considered when determining the overall goodness-of-fit tests to be used for this research. Once data were collected from the survey instrument and the model built in

AMOS, then the hypotheses were tested and the goodness-of-fit indices values determined.

Summary

The methodology was quantitative in nature using a web-based survey instrument to collect the data and SEM to analyze the strength of the relationships within the proposed research model. The survey instrument was made of measures from previously validated studies, and some modifications were made to ensure consistency with USAF terminology. The population included 600 Logistics Readiness Officers from across the USAF. Once a list of e-mails was compiled, the population was sent the link to the survey. A total of 275 usable responses were received, a response rate of 45.8%, and in Chapter IV, the data from the survey is outlined and analyzed using the methodology described above. Chapter V presents conclusions and recommendations for the overall study.

IV. Data Analysis and Results

Overview

The previous chapters outlined the problem statement and presented the research question, reviewed literature pertaining to training transfer and its influences, and proposed the hypotheses tested in this study. In addition, Chapter III discussed the methodology for collecting and analyzing data and outlined each of the 11 measures that comprised the survey used in this study. This chapter summarizes the descriptive statistics, survey findings, and presents the data analysis.

In an effort to answer the research question posed in Chapter I and investigate the nine hypotheses given in Chapter II, the analysis technique of SEM was applied and implemented using the AMOS software package. First, hypotheses one through eight, which posited relationships among the constructs in the proposed research model, were tested utilizing the regression weights formulated by AMOS. Finally, hypothesis nine, which posited the fit of the model as a whole, was tested using the fit indices of Chi-square (χ^2), Goodness of Fit Index (GFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) as given by AMOS. After the creation and testing of the proposed research model, some modifications were introduced to provide a better understanding of the influences on training transfer and the relationships between those influences and training transfer.

Descriptive Statistics

The web-based survey used in this research resulted in 275 usable respondents, resulting in a 45.8% response rate. This response rate of 45.8% is greater than the

average response rate found in general survey research (between 10-30%) and web-based survey research (between 30-40%) (Alreck & Settle, 2004; Cook, Heath, & Thompson, 2000). The demographics of the 275 respondents are outlined in Table 14. Demographic information collected from respondents included gender, age, grade, highest degree earned, Total Active Federal Military Service (TAFMS), Total Active Federal Commissioned Service (TAFCS), and time in grade. For this table, age was recorded into three year groups: a) less than 25, b) 25–30, and c) over 30 years. Additionally, TAFMS was recorded into four year groups: a) less than 5, b) 5–10.6, c) 10.7–15.7, and d) 15.8–20 years. TAFCS was recorded into four year groups: a) less than 2, b) 2-3, c) 3-4, and d) greater than 4 years. The mode of the respondents' age was between 25-30 years old (44%). The most common degree earned was a bachelor's degree with a frequency of 47.6%. The majority of the respondents had been in the military for less than five years (52.1%). Additional demographic data collected indicated that the majority of respondents were male (71.3%) and had been commissioned as an officer in the USAF for an average of 2.21 years and were in the grade of O-2/O-2E (57.5%, the E stands for prior-enlisted time in the military). Each sample demographic differed from the population demographic by less than or equal to 5 percentage points, and therefore deemed representative of the population.

Table 15 repeats the mean score, standard deviation, and measure of internal reliability estimates as given in Chapter III as well as including the skewness, kurtosis, and correlations for each construct. The skewness and kurtosis statistics were used to measure normality and is discussed in the following section. The correlation matrix was studied to determine if any constructs displayed signs of multicollinearity, a condition in

which a set of constructs are highly correlated among themselves. Multicollinearity induces inaccuracy in the estimates of regression weights for each path, particularly when the multicollinearity is fairly high (correlations greater than .8 among the constructs) (Grewal, Cote, & Baumgartner, 2004). The correlation matrix did not contain any correlations greater than .8 and therefore the effects of multicollinearity are not significant enough to create a problem for analysis of SEM results.

Structural Equation Modeling (SEM)

SEM provided the strength of relationships among the constructs with respect to the entire model. Before beginning the analysis, the data were tested for normality. This was important because SEM assumes the measures are multivariately normally distributed (Raykov & Marcoulides, 2000). If the measures were not normally distributed, there was an increased risk the maximum likelihood analysis would generate biased standard errors as well as an inaccurate χ^2 . Measures of skewness and kurtosis were calculated for each construct (Table 15). According to Raykov and Marcoulides (2000), values close to zero for both statistics mean the measures likely follow a normal distribution. All constructs but prior job knowledge were within the acceptable range of -1 to 1 for skewness and kurtosis. Although the prior job knowledge construct was not within the range for normality and the constructs' Cronbach's alpha was below the acceptable limit of .70, it was still included in the first iteration of the proposed research model tested by SEM. This first iteration was to determine if there was a significant relationship between prior job knowledge and pretraining motivation. This relationship

was removed from subsequent model iterations based on the non-normal data and the poor reliability.

Table 14. Sample Demographic Statistics

| Characteristic | <i>n</i> | % | Characteristic | <i>n</i> | % |
|---|----------|------|---|----------|------|
| <i>Gender (n=275)</i> | | | <i>Total Active Federal Military Service Time (TAFMS) (in years) (n=265)</i> | | |
| Male | 196 | 71.3 | < 5 | 138 | 52.1 |
| Female | 79 | 28.7 | 5-10.6 | 53 | 20 |
| <i>Age (in years) (n=275)</i> | | | 10.7-15.7 | 67 | 25.3 |
| < 25 | 54 | 19.6 | 15.8-20 | 7 | 2.6 |
| 25-30 | 121 | 44 | | | |
| > 30 | 100 | 36.4 | | | |
| <i>Grade (n=275)</i> | | | <i>Total Active Federal Commissioned Service (TAFCS) Time (in years) (n=264)</i> | | |
| O-1 | 76 | 27.7 | < 2 | 100 | 37.9 |
| O-1E | 38 | 13.8 | 2-3 | 110 | 41.7 |
| O-2 | 92 | 33.5 | 3-4 | 52 | 19.7 |
| O-2E | 66 | 24 | > 4 | 2 | 0.75 |
| O-3 | 2 | 0.73 | | | |
| O-3E | 1 | 0.36 | | | |
| <i>Highest Degree Earned (n=275)</i> | | | <i>Time in Grade (in years) (n=266)</i> | | |
| Bachelor's Degree | 131 | 47.6 | < 1 | 102 | 38.4 |
| Bachelor's Degree plus | 108 | 39.3 | 1-2 | 144 | 54.1 |
| Graduate Degree | 27 | 9.8 | > 2 | 20 | 7.5 |
| Graduate Degree plus | 5 | 1.8 | | | |
| Some doctorate work completed | 3 | 1.1 | | | |
| Professional School Degree | 1 | 0.36 | | | |

Table 15. Descriptive Statistics for Survey Measures (n=275)

| Measure | α | M | SD | Skewness | Kurtosis | Correlation Coefficient | | | | | | | | | | |
|-----------------------------------|----------|------|------|----------|----------|-------------------------|-------|-------|------|-------|-------|-------|-------|-------|-----|----|
| | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1. Training Reputation | .76 | 3.44 | 0.69 | -0.20 | -0.26 | - | | | | | | | | | | |
| 2. Intrinsic Incentives | .90 | 3.78 | 0.74 | -0.67 | 0.85 | .47** | - | | | | | | | | | |
| 3. Compliance | .64 | 3.87 | 0.73 | -0.67 | 0.84 | .28** | .26** | - | | | | | | | | |
| 4. Prior Job Knowledge | .12 | 3.73 | 3.89 | 2.35 | 5.56 | -.03 | -.06 | -.17* | - | | | | | | | |
| 5. Organizational Commitment | .86 | 4.15 | 0.77 | -0.86 | 0.44 | .34** | .39** | .14* | .13* | - | | | | | | |
| 6. Subordinate Support | .82 | 3.57 | 0.77 | -0.31 | 0.28 | .23** | .38** | .10 | -.06 | .23** | - | | | | | |
| 7. Supervisor Support | .91 | 3.37 | 0.74 | -0.37 | 0.72 | .23** | .28** | .05 | -.07 | .22** | .46** | - | | | | |
| 8. Pretraining Motivation | .87 | 4.15 | 0.53 | -0.37 | -0.44 | .33** | .47** | .14* | .13* | .60** | .24** | .21** | - | | | |
| 9. Perceived Training Transfer | .92 | 2.85 | 0.73 | -0.34 | 0.04 | .45** | .46** | .25** | -.06 | .28** | .47** | .45** | .29** | - | | |
| 10. Transfer Enhancing Activities | .84 | 3.29 | 0.52 | -0.23 | 0.12 | .42** | .29** | .18* | -.02 | .22** | .35** | .36** | .25** | .53** | - | |
| 11. Task Constraints | .90 | 3.36 | 0.79 | -0.20 | 0.005 | .16* | .11 | .01 | -.08 | .09 | .17* | .18* | .09 | .09 | .09 | - |

* $p < .05$ ** $p < .001$

Each of the 83 questions was entered with its respective construct in the model built using AMOS. The raw survey results (i.e., Likert scale values ranging from 1-5) were used as the inputs into AMOS. Figure 6 reports the proposed research model as built in AMOS before execution. The AMOS model was analyzed by reviewing the selected goodness-of-fit indices discussed in Chapter III. In addition to reviewing the goodness-of-fit indices, each relationship in the model was analyzed by the strength of the relationship, depicted by the standardized regression weights, and statistical significance, depicted by critical ratios. Results of the AMOS analysis and goodness-of-fit indices for the proposed research model are listed in Table 16.

Table 16. Path and Fit Statistics for Proposed Research Model

| Proposed Research Model | | | |
|--------------------------------|---------------------------------------|--------------------------|-----------------------|
| Path | Standardized Regression Weight | Regression Weight | Critical Ratio |
| TR→PM | .08 | .07 | 0.27 |
| II→PM | .70 | .41 | 0.63 |
| COM→PM | .37 | .15 | 0.36 |
| PJK→PM | 1.16 | .68 | 0.44 |
| OC→PM | -.21 | -.16 | -0.12 |
| OC→PTT | .16 | .16 | 1.95 |
| PM→PTT | -.04 | -.06 | -0.54 |
| SubS→PM | -.28 | -.17 | -0.38 |
| SubS→PTT | .25 | .20 | 3.42** |
| SupS→PM | .22 | .13 | 0.37 |
| SupS→PTT | .13 | .10 | 1.94 |
| TEAQ→PTT | .35 | .40 | 4.69** |
| TC→PM | .60 | .48 | 0.46 |
| TC→PTT | .01 | .01 | 0.16 |
| Fit Measure | Proposed Research Model | | |
| χ^2 | 6638.59, <i>df</i> = 3270 | | |
| <i>p</i> -value (χ^2) | .00 | | |
| GFI | .61 | | |
| CFI | .75 | | |
| RMSEA | .06 | | |
| <i>p</i> -value (RMSEA) | .00 | | |

* *p* < .05

** *p* < .001

TR=Training Reputation

II=Intrinsic Incentives

COM=Compliance

PJK=Prior Job Knowledge

OC=Organizational Commitment

PM=Pretraining Motivation

PTT=Perceived Training Transfer

SubS=Subordinate Support

SupS=Supervisor Support

TEAQ=Transfer Enhancing Activities

TC=Task Constraints

Figure 6. Proposed Research Model as input into AMOS

For the proposed research model (Figure 6), none of the five goodness-of-fit criteria was met. Therefore, the model was determined not to be a good fit. Along with the poor fit of the model, the majority of relationships identified in the model were not statistically significant at $p < .05$ because the critical ratios were values between -1.96 and 1.96 (Byrne, 2001). Critical ratios are the values which determine statistical significance in SEM and are commonly used in conjunction with a 95% confidence interval, and thus, at $p < .05$ the cutoffs are -1.96 and 1.96. After determining the results of the proposed research model were not statistically significant, hypotheses one through nine given in Chapter II were not analyzed in comparison with this model.

AMOS provides an output called Modification Indices which suggests changes that may improve the model. The modification indices for the proposed research model were analyzed. Modification indices greater than 4 indicate that the χ^2 value will decrease if the relationships is either introduced or subtracted from the model (Byrne, 2001). Upon examination of the modification indices provided by AMOS, the data suggested the inclusion of an additional path, the addition of the relationship between training reputation and perceived training transfer, in the proposed research model. The modification index for the relationship between training reputation and perceived training transfer was 13.7 which is greater than the acceptable standard of 4, and thus was considered for inclusion in the modified final model.

Other modifications made to the proposed research model included the removal of the following relationships: subordinate support and pretraining motivation; supervisor support and pretraining motivation; training reputation and pretraining motivation; task constraints and pretraining motivation; and organizational commitment and perceived

training transfer. Those modifications were made based on the unacceptable critical ratios calculated by AMOS for the proposed research model and were supported by Fecteau et al.'s earlier results (1995). Fecteau et al. (1995) had also found the relationships listed above lacking in statistical significance and, when combined with the poor critical ratios found in this research, led to the relationships being removed from the model. The relationships between training reputation and pretraining motivation and the relationship between organizational commitment and perceived training transfer were removed due to the unacceptable critical ratios of 0.27 and 1.95, respectively.

Along with the modifications listed above, two constructs were also removed from the proposed research model. The prior job knowledge and compliance constructs were removed based on their respective Cronbach's alphas. The prior job knowledge and compliance measures produce Cronbach's alphas of .12 and .64, respectively. As reliability estimates below the acceptable limit of .70 (Nunnally & Bernstein, 1994), both constructs were removed from the model. Finally, the construct of transfer enhancing activities was altered to increase its reliability. Originally, the construct was measured through 17 questions but eight of the questions were removed. The eight questions were chosen based on low correlation values with the remaining measures. In addition, once the questions were removed the reliability of the construct as a whole improved from .84 to .87. After reviewing the measures' reliability estimates, each measure's content was reviewed to determine if that measure was a key survey question. Based on this researcher's definition of the transfer enhancing activities construct, none of the eight measures removed contained content that was vital to defining transfer enhancing activities as a whole. Table 17 lists the eight measures removed. Based on these

modifications, a revised model was formulated and tested. Figure 7 illustrates the new model as input into AMOS before execution. Results of the AMOS analysis and goodness-of-fit indices for the modified final model are listed in Table 18.

Table 17. Eight Questions Removed from the Transfer Enhancing Activities Measure

| Survey Question Number | Question |
|-------------------------------|--|
| 57 | During LRO training, the instructors never told us why, just told us to do it. (R) |
| 61 | It would have helped us to remember things in LRO training if the instructors had given us some memory aids, such as check lists, color-coded diagrams, etc. |
| 62 | Job aids are available on the job to support what LROs learned in technical school. |
| 63 | During LRO training, we couldn't tell whether or not we made mistakes. (R) |
| 65 | During LRO training, the instructors discussed the possibility of no supervisory support for our training when we were on the job. (R) |
| 67 | During LRO training, we talked about what to do if people at our duty station told us to do the job in a different way. |
| 69 | During LRO training, we discussed how other LROs attitudes toward the technical school might affect our job performance. |
| 70 | During LRO training, we discussed how our supervisor's attitudes toward our training might affect our job performance. |

(R) indicates item is reverse scored

For the modified final model, three of five goodness-of-fit criteria were met as shown in Table 18. Those three criteria were CFI, RMSEA, and p-value (RMSEA). Therefore, this new model was determined to have a good fit. Each of the eight relationships in the model were statistically significant but at varying levels (from $p < .001$ to $p < .2$) based on the critical ratios. In addition, each of the relationships were considered strong because the standardized regression weights were greater than .05 (Byrne, 2001; Loehlin, 2004).

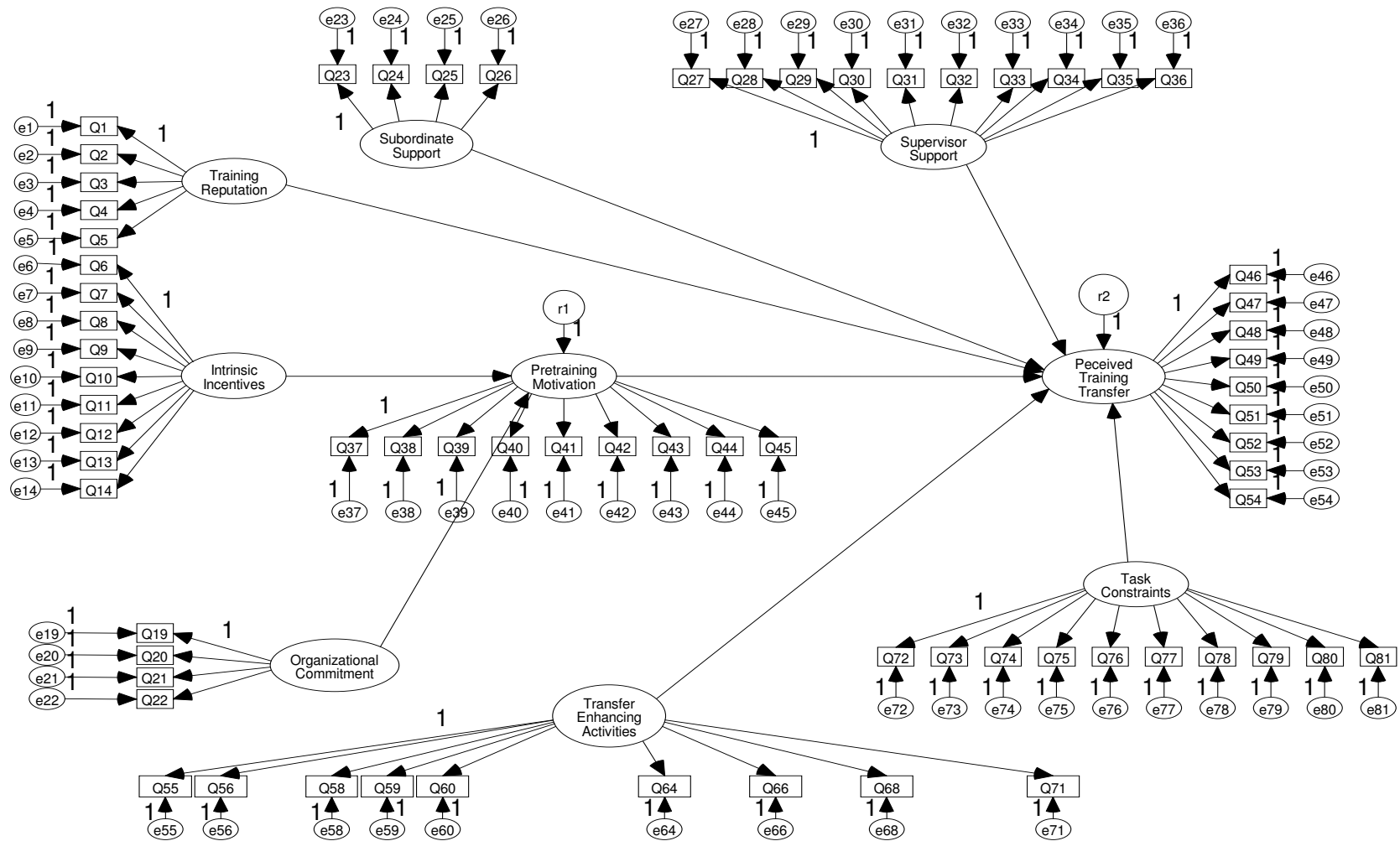


Figure 7. Modified Final Model as input into AMOS

Table 18. Path and Fit Statistics for Modified Final Model

| Modified Final Model | | | |
|------------------------------|--------------------------------|-------------------|----------------|
| Path | Standardized Regression Weight | Regression Weight | Critical Ratio |
| TR→PM | - | - | - |
| II→PM | .27 | .17 | 4.21** |
| COM→PM | - | - | - |
| PJK→PM | - | - | - |
| OC→PM | .57 | .44 | 7.16** |
| OC→PTT | - | - | - |
| PM→PTT | .06 | .09 | 1.17 |
| SubS→PM | - | - | - |
| SubS→PTT | .30 | .27 | 4.24** |
| SupS→PM | - | - | - |
| SupS→PTT | .12 | .11 | 2.01* |
| TEAQ→PTT | .26 | .28 | 3.57** |
| TC→PM | - | - | - |
| TC→PTT | -.09 | -.10 | -1.67 |
| TR→PTT | .27 | .38 | 3.67** |
| Fit Measure | Final Model | | |
| χ^2 | 3049.06, <i>df</i> = 2129 | | |
| <i>p</i> -value (χ^2) | .00 | | |
| GFI | .77 | | |
| CFI | .92 | | |
| RMSEA | .04 | | |
| <i>p</i> -value (RMSEA) | 1.00 | | |

* $p < .05$ ** $p < .001$
 TR=Training Reputation
 II=Intrinsic Incentives
 COM=Compliance
 PJK=Prior Job Knowledge
 OC=Organizational Commitment
 PM=Pretraining Motivation
 PTT=Perceived Training Transfer
 SubS=Subordinate Support
 SupS=Supervisor Support
 TEAQ=Transfer Enhancing Activities
 TC=Task Constraints

The improvement in the χ^2 value from the original proposed model to the new model is 3589.529 ($df=1141$). This large reduction provides further evidence that the modified final model is the more appropriate model to identify influences on training transfer. For this reason, the modified final model is utilized to test the nine hypotheses described in Chapter II.

The sections below describe the analysis of the nine hypotheses described in Chapter II. Each hypothesis was first analyzed for any modifications made due to the poor fit of the proposed research model. This includes describing how certain relationships were removed based on the poor fit of the proposed research model. Next, each relationship remaining was analyzed in conjunction with the modified final model and it is these remaining relationships that were used to test the nine hypotheses. Finally, support for each hypothesis was based on the strength of the relationship evidenced by the standardized regression weight and the statistical significance of each relationship at $p < .05$. Some relationships were statistically significant at values better than $p < .05$, and those relationships are noted in their respective sections. Any other deviations from the criteria listed above are noted under the respective sections.

Hypothesis 1 Analysis

Hypothesis 1 tested whether (a) a positive relationship existed between training reputation and pretraining motivation; (b) a positive relationship existed between intrinsic incentives and pretraining motivation; (c) a negative relationship existed between compliance and pretraining motivation. Only H1b can be accepted based on the modified final model. H1a and H1c included relationships that were removed from the proposed

research model because the relationships of pretraining motivation with training reputation and the construct of compliance were not statistically significant and not reliable, respectively. The standardized regression weight for the remaining H1b relationship is .27 ($p < .001$), indicating that intrinsic incentives does influence pretraining motivation. As intrinsic incentives increases, pretraining motivation increases. Therefore, H1b is supported as there is a positive relationship between intrinsic incentives and pretraining motivation. Hypothesis 1 was fully supported when only analyzing the modified final model and H1b, because H1a and H1c were removed from the model.

Hypothesis 2 Analysis

Hypothesis 2 tested whether a positive relationship existed between prior job knowledge and pretraining motivation. This hypothesis was not supported by the proposed research model due to the insufficient Cronbach's alpha of .12. Therefore, the construct of prior job knowledge was removed from the modified final model, and thus this hypothesis was not analyzed.

Hypothesis 3 Analysis

Hypothesis 3 tested whether a positive relationship between organizational commitment and pretraining motivation existed. This hypothesis was supported based on the relationship between organizational commitment and pretraining motivation ($\beta = .57$, $p < .001$). Therefore, hypothesis 3 was supported based on a positive relationship between organizational commitment and pretraining motivation.

Hypothesis 4 Analysis

Hypothesis 4 tested whether a positive relationship existed between organizational commitment and perceived training transfer. The proposed research model did not support this hypothesis due to a lack of statistical significance. The critical ratio for the relationship was just under the 1.96 cutoff for being statistically significant at $p < .05$. Therefore, the relationship between organizational commitment and perceived training transfer was removed from the modified final model, and thus, this hypothesis was not analyzed.

Hypothesis 5 Analysis

Hypothesis 5 tested whether (a) a positive relationship existed between subordinate support and pretraining motivation; (b) a positive relationship existed between supervisor support and pretraining motivation; and (c) a negative relationship existed between task constraints and pretraining motivation. Hypotheses 5a, 5b, 5c were not supported by the proposed research model because all three relationships failed to produce statistically significant results. This finding is supported in research conducted by Fecteau et al. (1995) which determined all three relationships lacked statistical significance and should be removed from the model. While the literature from Chapter II and internal reliability estimates of the measures given in Chapter III supported the inclusion of the relationships, the findings by this research determined these relationships should be removed from the final version of the model tested. Therefore, the relationships between subordinate support/supervisor support/task constraints and

pretraining motivation were removed from the modified final model, and thus, hypothesis 5 was not analyzed.

Hypothesis 6 Analysis

Hypothesis 6 tested whether (a) a positive relationship existed between subordinate support and perceived training transfer; (b) a positive relationship existed between supervisor support and perceived training transfer; and (c) a negative relationship existed between task constraints and perceived training transfer. One of the three hypotheses, H6a, was supported by the proposed research model, but due to the poor fit of the model as whole, hypothesis 6 was not supported. The three hypotheses were then tested in conjunction with the modified final model and according to the standardized regression weights and critical ratios from Table 16, hypotheses 6a, 6b, and 6c were all supported. The standardized regression weights for these three relationships (.30, .12, and -.09) indicated that subordinate support, supervisor support, and task constraints did not influence training transfer. The paths for subordinate support and supervisor support were significant at $p < .001$ but the path for task constraints was significant at $p < .1$. While the path from task constraints leading to training transfer is not statistically significant at the acceptable cutoff of $p < .05$, this relationship is still strong enough to show the negative influence of task constraints on training transfer at a significant level of $p < .1$. Therefore, H6c is still considered supported in addition to H6a and H6b. Hypothesis 6 was fully supported when tested in conjunction with the modified final model.

Hypothesis 7 Analysis

Hypothesis 7 tested whether a positive relationship between transfer enhancing activities and perceived training transfer existed. This hypothesis was supported by the proposed research model when only considering the statistical significance of that specific relationship. However, due to the poor fit of the model as whole, hypothesis 7 was not supported. When tested in conjunction with the modified final model, hypothesis 7 was supported. The construct of transfer enhancing activities was modified by removing eight questions (Table 17) to increase the reliability of the measure. The relationship between transfer enhancing activities and perceived training transfer was significant ($\beta = .26, p < .001$). Hypothesis 7 was fully supported when tested in conjunction with the modified final model.

Hypothesis 8 Analysis

Hypothesis 8 tested whether a positive relationship existed between pretraining motivation and perceived training transfer. This relationship was not supported by the proposed research model due to a number of reasons. First, the path's regression weight between pretraining motivation and perceived training transfer was not above the acceptable limit of 0.05. Next, the path was not statistically significant at any reasonable level with a critical ratio of -0.54. Finally, the proposed research model was not a good fit, and thus, the relationship proposed by hypothesis 8 was not supported. When tested in conjunction with the modified final model, the path's standardized regression weight of .06 was above the .05 acceptable limit but the path is only statistically significant at

$p < .2$. This significance level is lower than the standard of $p < .05$. This relationship is a vital link in the model, one which is strongly supported by the literature, and for that reason this path remained in the model (Colquitt et al., 2000; Fecteau et al., 1995; Mathieu & Martineau, 1997; Noe & Schmitt, 1986). Thus, hypothesis 8 was supported when tested in conjunction with the modified final model with the caveat that it was significant at the $p < .2$ level.

Hypothesis 9 Analysis

Hypothesis 9 tested whether the model as shown with the relationships given would be a good fit. As discussed in the SEM section above, the proposed research model was not a good fit but the modified final model was a good fit. The modified final model was a good fit as determined by CFI, RMSEA, p-value RMSEA, and the drastic drop in the χ^2 value from the proposed research model to the modified final model. These results can be found in Table 18. The GFI value was the only index to not support the model's fit. The GFI value did not reach its acceptable level of .90. However, there was an increase in the GFI index value from the proposed research model (.61) to the modified final model (.77) and this supports the rest of the indices in determining that the modified final model was a better fit than the proposed research model. Hypothesis 9 was supported based on the modified final model.

New Relationship between Training Reputation and Perceived Training Transfer

Based on the modification indices, a new relationship was included in the modified final model that was not included in the proposed research model. The modification indices recommended that a relationship might exist between training

reputation and perceived training transfer. After thoughtful consideration, it was determined that this addition made theoretical sense for the military context. In the military, members are often motivated to attend training not necessarily due to the reputation of the training but because the training is mandatory (Karrasch, 2003; Salas et al., 2003). Therefore, the reputation of a training course may not significantly influence pretraining motivation but have a greater influence on training transfer. Once back from training, a military member may be more willing to transfer the training back to the job if those around him/her support a positive reputation of the training and the opposite may be true as well.

The new relationship included in the modified final model ($\beta = .27, p < .001$) suggests as the positive reputation of the training increases, the transfer of the training should also increase. The new path is fully supported.

Analysis of Comments Received from Question 91

Question 91 ($n = 102$) was an open-ended question, which asked respondents to provide any final comments or concerns about LRO training or the survey. While the responses were not used as data to support or not support the proposed research model or the modified final model, the responses were used to identify the common issues about LRO training which the graduates deemed important. These common issues or themes may be useful in future research and will be discussed in Chapter V. The top themes found in the responses are given in Table 19.

Table 19. Common Themes Found in the Opened-ended Question

| |
|---|
| <p>1. Move towards just in time training. Only attend the block at the technical school associated with the job you will work in</p> <p>a) When attending all the blocks at once, LROs are losing information from the areas where they are not working and will not work until a couple years down the road</p> |
| <p>2. Too much breadth and not enough depth to be effective officers</p> <p>a) LROs should split back out to the three separate career fields</p> <p>b) Have specific tracks in the LRO career field that allow certain officers depth but does not include splitting the career field back out</p> <p>c) Too much breadth leads to a lack of expertise in the officer career fields...“Jack of all trades, master of none”</p> |
| <p>3. Lack of competent instructors at the technical school</p> <p>a) Need to have instructors teach the areas where they are the expert, i.e. do not have a former transportation officer teaching logistics plans.</p> <p>b) Need to have instructors who support the LRO concept and are advocates of the merge</p> |
| <p>4. Material is covered to quickly and only taught in a manner to get students to pass tests and then dump the information in preparation for the next test. For example the cover of the class material states “Not Intended for on the Job Use”</p> <p>a) Graduates do not feel as if they are effectively transferring training back to the job because each base does things different than it was taught at school and this leads to confusion and lack of motivation to transfer.</p> <p>b) Obsolete information taught at school...“The book is wrong, but for testing purposes, learn it this way.”</p> |
| <p>5. Only good that came out of training was the networking between officers and a general knowledge of definitions of common terms used in LRO career field</p> <p>a) Overall picture of where the LRO fits in but nothing more</p> <p>b) Base tours through Lackland’s and Randolph’s LRS were useful</p> |
| <p>6. The abundance/over-manning of 2nd and 1st Lt LROs at every base lead to fewer leadership roles and learning opportunities for a Lt and more time spent in “made up” jobs</p> |
| <p>7. School house says, “Sorry, there is a lot to learn, you are going to be fire hosed with information, and you'll be okay.” However, LROs want to be more than okay; they want to be confident.</p> |
| <p>8. Most effective training is OJT but it takes longer than the 1yr rotation through all the core competencies</p> <p>a) Need formalized training schedule at base level</p> |
| <p>9. Lack of supervisors who have an understanding of the LRO concept</p> |
| <p>In summary, a quote written by one of the respondents ties a lot of the common themes together: “Tell me, and I'll forget. Show me, and I'll remember. Involve me, and I'll learn. The LRO course mainly ‘told’ us things; the tours ‘showed’ us things...all we need is ‘involvement’.”</p> |

Summary

This chapter outlined the results obtained during this research through SEM techniques. Two models were tested and nine hypotheses analyzed. The proposed research model (Figure 6) was a poor fit and a number of modifications were deemed necessary. The modified final model (Figure 7) included the modifications and was found to be a better fit than the proposed research model. Once the model was assessed to have a good fit, the regression weights were analyzed in relation to the eight remaining hypotheses to determine the strength of each relationship. A summary of the results from the nine hypotheses tests is listed in Table 20. Chapter V will provide conclusions and recommendations based on the analysis presented in this chapter.

Table 20. Summarized Support of Hypotheses

| Hypothesis | Predicted Relationship | Results (significant at $p < 0.05$) |
|-----------------------|------------------------|--|
| H1a | + TR→PM | Not Supported—Proposed Research Model Not Included—Modified Final Model |
| H1b | + II→PM | Not Supported—Proposed Research Model Supported—Modified Final Model |
| H1c | - COM→PM | Not Supported—Proposed Research Model Not Included—Modified Final Model |
| H2 | + PJK→PM | Not Supported—Proposed Research Model Not Included—Modified Final Model |
| H3 | + OC→PM | Not Supported—Proposed Research Model Supported—Modified Final Model |
| H4 | + OC→PTT | Not Supported—Proposed Research Model Not Included—Modified Final Model |
| H5a | + SubS→PM | Not Supported—Proposed Research Model Not Included—Modified Final Model |
| H5b | + SupS→PM | Not Supported—Proposed Research Model Not Included—Modified Final Model |
| H5c | - TC→PM | Not Supported—Proposed Research Model Not Included—Modified Final Model |
| H6a | + SubS→PTT | Not Supported—Proposed Research Model Supported—Modified Final Model |
| H6b | + SupS→PTT | Not Supported—Proposed Research Model Supported—Modified Final Model |
| H6c | - TC→PTT | Not Supported—Proposed Research Model Supported*—Modified Final Model |
| H7 | + TEAQ→PTT | Not Supported—Proposed Research Model Supported—Modified Final Model |
| H8 | + PM→PTT | Not Supported—Proposed Research Model Supported**—Modified Final Model |
| New Path Hypothesized | + TR→PTT | Not Included—Proposed Research Model Supported Modified Final Model |
| H9 | Model is good fit | Not Supported—Proposed Research Model Supported—Modified Final Model |

Exceptions: *Supported only at $p < .1$

**Supported only at $p < .2$

V. Conclusions

Overview

The overall purpose of this study was to assess how the influences/attitudes/beliefs of LRO technical school graduates influence perceived transfer of training back to the job. In doing so, this study replicated a previous study that measured eight influences on training transfer in a civilian organization (Facteau et al., 1995). In addition, this study extended the previous research model by introducing two additional constructs, prior job knowledge and transfer enhancing activities, into the model. Furthermore, the relationships between the independent constructs (training reputation, intrinsic incentives, compliance, prior job knowledge, organizational commitment, subordinate support, supervisor support, task constraints, and transfer enhancing activities) and the dependent constructs (pretraining motivation and perceived training transfer) included in the proposed research model (Figure 5) were examined using SEM. Finally, the fit of the model as a whole was examined. This chapter presents a discussion of the results, recommendations, limitations, suggestions for future research, and conclusions.

Discussion

The research question posited in Chapter I, “how do trainees’ general beliefs and attitudes about LRO training affect the transfer of training back to the trainees’ job”, was answered by evaluating nine hypotheses in conjunction with two SEM models. SEM analysis allowed the introduction of causal paths between the variables, as well as the analysis of the fit of the entire model. The first model tested was the proposed research

model (Figure 5) which was not a good fit based on the goodness-of-indices listed in Table 13. This model was not used to analyze the nine hypotheses. The second model contained modifications that were made based on modification indices, statistical significance of paths, and internal reliability estimates. The second model, the modified final model in Figure 7, was a good fit based on three of the five goodness-of-fit indices. This model was used to test the nine hypotheses.

Of the nine hypotheses proposed in Chapter II, six were supported in the modified final model and one new relationship was added. The six hypotheses supported were H1b, H3, H6, H7, H8, and H9. The remaining hypotheses were not supported and not included in the final model. For further discussion, see Chapter IV.

Hypothesis 9 predicted that the model as shown with the relationships given would be a good fit. Results of the proposed research model proved that its fit was poor. The proposed research model failed all the goodness-of-fit indices. Based on modifications, a new model, the modified final model, was built. This new model resulted in a good fit. Three of the five goodness-of-fit indices were supported; therefore, hypothesis nine was supported when tested in conjunction with the modified final model.

A new path was added to the modified final model in support of the modification indices provided by AMOS. A path from training reputation directly to perceived training transfer was added and found to be both statistically significant and a strong positive relationship. This new path is also supported by the literature as a good theoretical relationship in a military context (Karrasch, 2003; Salas et al., 2003). In the military, training is often mandatory and thus the motivation to attend may not be based on the reputation of the training but just the very fact that the training is required. Yet,

when a military member returns from training, the reputation of the training may have a direct influence on the ability to transfer the training back to the job. This direct influence is seen in the modified final model, where an increase in positive reputation of the training increases the transfer of training.

Recommendations

This study identified important relationships between certain influences (i.e. pretraining motivation, training reputation, intrinsic incentives, organizational commitment, subordinate support, supervisor support, task constraints, and transfer enhancing activities) and training transfer based on the perceptions of LRO technical school graduates. These findings indicated pretraining motivation, moderated by intrinsic incentives and organizational commitment are important influences on training transfer measurement. Training reputation, task constraints, subordinate/supervisor support, and transfer enhancing activities all had direct influences on training transfer.

These relationships identified by the modified final model may aid in determining where to focus efforts to improve the LRO technical school/curriculum to ensure training transfer occurs. In addition identifying different influences than those used in this research may help in further understanding training transfer. Beyond just identifying these relationships and influences, acting on the information may influence decisions made concerning the LRO technical school and career field; specific ways to act on the information will be addressed below.

The LRO technical school has a vested interest in training transfer based on the school's stated purpose "to provide training to personnel in AFSC 21R1 (LR), in the

knowledge and skills needed to perform the duties of LROs” (Department of the Air Force, 2003). This purpose is supported when LRO technical school graduates transfer the training back to the job and the findings from this research laid the foundation for improving the ability of LRO technical school graduates to transfer training back to the job. The recommendations made here may be useful to both the LRO technical school, and the LR career field as a whole, because some recommendations apply to more than just the technical school.

Detailed Recommendations for Utilizing these Findings

Below are some recommendations for the LRO technical school and/or career field to utilize the information provided by this research. Recommendations are listed for each construct remaining in the modified final model.

Training Reputation. With the information gained from this research the LRO technical school could invest in an effort to ensure all LROs have a good working knowledge of the technical school, its purpose, and its benefits. By taking the time to ensure LROs have the right information and perspective on what the school provides, this may lead to a more positive reputation and thus positively influence the transfer of training back to the job. If supervisors, peers, and graduates themselves are provided this knowledge then the school stands to achieve part of its purpose of ensuring graduates are transferring training back to the job.

Subordinate and Supervisor Support. The LR career field may want to educate supervisors and subordinates on the role of the LRO technical school and how to best utilize the graduates of the school. If a supervisor or subordinate has a good

understanding of the LR career field and knows the purpose of the technical school they can aid in supporting the new LRO graduate with transfer the training back to the job. The support can come in the form of career field mentoring, rotating the graduates through the different core competencies of the LR career field, and allowing for/understanding that mistakes can and will occur as a part of the learning process.

Transfer Enhancing Activities and Task Constraints. Based on the research, it appears, there are numerous ways the LRO technical school may influence how much the LRO graduates will transfer back to the job. It starts with providing the right information and the right study aids to help retain the information. LRO technical school instructors may want to conduct lessons in a manner which not only goes over the textbook material but also provides real world examples or even gives the trainees hands on experience. Probably the most important transfer enhancing activity the school might provide is mentoring/advice on how to deal with those military members back at the trainees' duty station that may not understand or support the LRO concept. Once back on the job, a graduate may find certain task constraints which may negatively influence the ability to transfer training back to the job. By identifying the specific task constraints that effect LRO graduates such as those listed in Table 1 in Chapter II, the LR career field can work towards eliminating or adjusting the situation to alleviate these constraints. Several of the responses to the open-ended question supported the fact that the LRO graduates have task constraints which could be eliminated. Several responses stated the LR career field has not provided enough clear written policies and procedures concerning utilizing formal training back on the job. Other responses stated that even after graduating from the LRO technical school, most graduates were not prepared for the tasks needed to do

the job assigned. This will require further research to identify the specific areas to improve.

Intrinsic Incentives and Organizational Commitment. Each graduate can to some degree control his/her own intrinsic incentives and personal commitment to the organization. The construct of organizational commitment is also driven by the characteristics of the organization as well. The strength of the commitment or incentive can be identified by the graduate. If there is not some incentive that motivates a trainee to learn or a commitment to the organization, then no matter how much the LRO technical school does to promote its training, the trainees may not benefit from it. As such, the recommendation of this research is to encourage LROs to explore their own personal incentives to train and explore avenues for expanding their commitment to their organization. Both recommendations can be accomplished by the LRO or the organization through mentoring, promoting participation in organizational activities, and providing as much information about the LRO technical training as possible before attending. In addition, LROs may further develop their own influences of intrinsic incentives and organizational commitment by means of personal growth through outside avenues such as taking civilian logistics courses, reading books or articles pertaining to logistics, and taking an active part in their own education.

Pretraining Motivation and Training Transfer. Multiple areas feed into pretraining motivation such as intrinsic incentives and organizational commitment. Pretraining motivation is a construct that pulls multiple areas together to describe the attitudes and beliefs of trainees right before they attend the training. This construct has a direct relationship with training transfer and is the main funnel for the other influences to

flow through to indirectly affect training transfer. Thus, it is important for LROs to have high pretraining motivation. All the recommendations listed in the sections above may support the graduates' ability to transfer training either indirectly or directly. The literature states it can be a waste of money and time if the training is not utilized back on the job (Cannon-Bowers et al., 1995; Salas et al., 2003).

Limitations

There are several limitations to this study. First, data collected was self-reported by the LRO technical school graduates. Self-reported data relies on the accuracy of the perceptions of the graduates of the training program (Cook & Campbell, 1979; Laing, 1988). These perceptions might contain self-serving bias regarding their personal work and training experiences, which might have tainted the results. Podsakoff and Organ (1986) identified the circumstance of soliciting respondents' perceptions of an external environmental variable (the supervisor's behavior, formalization of organizational processes, climate) as a type of common method bias. Specifically, common method bias could be a problem due to results coming from one source. Acquiescence may have also been a limitation of this research due to respondents wanting to provide the socially acceptable answers to the survey question (Podsakoff & Organ, 1986). This research tried to mitigate any acquiescence through not providing too much detail to the respondents as to the nature of the survey, beyond providing basic instructional guidance. In essence, we did not want respondents to know the overall intent of the study so as to avert the potential that they would overtly or unintentionally stage their answers in an attempt to bias the survey. Also, the survey used in this research took approximately 20

minutes or more to complete. According to Podsakoff and Organ (1986), respondents taking long surveys can experience “transient mood states” where a consistent, yet artificial bias may be introduced across measures. A feature of this survey was the ability to stop and return to it a later time. This feature may have helped mitigate the bias from “transient mood states” but was not a full solution, and thus, controlling for “transient mood states” is a limitation of this research.

Next, this study assessed the transfer of training solely from the perspective of the LRO technical school graduates. If a similar survey was sent to both the graduates and their immediate supervisors, a more reliable comparison could have been done on the differences between how the graduates’ perceived the influences on training transfer and how their supervisors perceived the influences on training transfer. Additionally, Noe and Schmitt (1986) suggest that interviews or surveys with supervisors, mentors, and peers may strengthen the validity of the self-report information. Due to time limitations, such surveys were unable to be conducted.

Another limitation was the short time the LRO technical school has been in existence. The LR career field and LRO technical school are both still in their initial stages of development and this can influence the constructs of reputation, pretraining motivation, and subordinate/supervisor support by portraying the effects of these influences differently than a mature career field or technical school would. This portrayal may show the effects of the influences in a positive manner when in fact a mature career field or technical school would show the effect to be negative and the opposite may be true as well. The reputation construct and supervisor/subordinate support construct may have different affects on training transfer as the career field and technical school become

more established. The overwhelmingly negative responses about the LRO technical school and career field to the open-ended survey question indicate that the reputation of the technical school and career field are currently poor, but as the career field and technical mature this reputation may change. In order to determine if there is a change in the influences on training transfer this study should be repeated. If the initial negative attitude towards the change in the technical school or career field goes away, new LRO accessions may be more motivated to attend training and subordinates/supervisors may have greater support the training and the trainee. Due to the possible maturation over time of both the LRO technical school and LR career field, this study should be repeated to determine any changes in influences on training transfer.

Additionally, the majority of the questions on the survey were measured on a 5-point Likert scale which did not include an option for Not Applicable (N/A). Several survey respondents mentioned they would have preferred having the option to check N/A or have more options than just Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree. These options were not used in this study due to the questions being previously validated in conjunction with the 5-point Likert scale used.

Sample size was also a limitation. The rule of thumb used for this study was 10 respondents per construct or 200 respondents which ever is larger. Thus, the 275 responses exceeded the cutoff. Unfortunately, the goodness-of-fit indices determined a poor fit for the proposed research model. After further research it was determined the more relevant rule of thumb, based on Bentler and Chou (1987) recommend at least five cases per parameter estimate (including error terms as well as path coefficients). This rule would have required a sample size of 500. This size sample would have been

unlikely given the size of the given population being 600 graduates. This study would have required a response rate of 83.3% which is much greater than the average of 10-30% for behavioral science studies (Alreck & Settle, 2004; Cook et al., 2000).

Finally, Peters and O'Connor (1980) stress that determining proof of training transfer comes from eliminating all other factors that could cause outcomes to be perceived as coming from training. While this may seem the case with this training because the only requirement during training period was for the LROs to attend the LRO technical school, it cannot be ruled out that other confounding variables that were not measured may have affected the perceptions of training transfer and its influences. Graduates were not asked of their perceptions about whether they received quality training or if there were other influences not listed that may have affected their ability to transfer training. Thus, effects from possible new influences were not captured. It may be appropriate to identify and include additional influences in future research.

Future Research

There are several opportunities for future research in the area of training transfer and the LR career field. First, further validation of the revised research model may provide more support for the constructs proposed in this study. The model could be run using other military or civilian training settings. Along with validating the final model, any future research should try to remove the limitations listed above.

Next, an area for future research includes taking another look at the constructs and relationships removed from the modified final model (the relationships between subordinate/supervisor support and pretraining motivation; task constraints and

pretraining motivation; organizational commitment and perceived training transfer; training reputation and pretraining motivation; and the constructs of prior job knowledge and compliance) to determine if there are other ways to include them back in the model. Also, it should be determined if there is a more appropriate way to measure the deleted constructs. In addition, future research could include conducting studies to determine if measuring trainees' training transfer through self-reported data is the most appropriate. A researcher could conduct studies with supervisors and peers of the graduates to analyze their perceptions of the influences on training transfer in comparison with the graduates' perceptions.

Further research as to measuring the level of training transfer of LRO technical school graduates may be beneficial now that some of the influences on training transfer are known. In addition to the future research of measuring the level of training transfer, another area to investigate includes training effectiveness. A researcher could develop a study to empirically determine if the influences on training transfer used in this study are the same for training effectiveness.

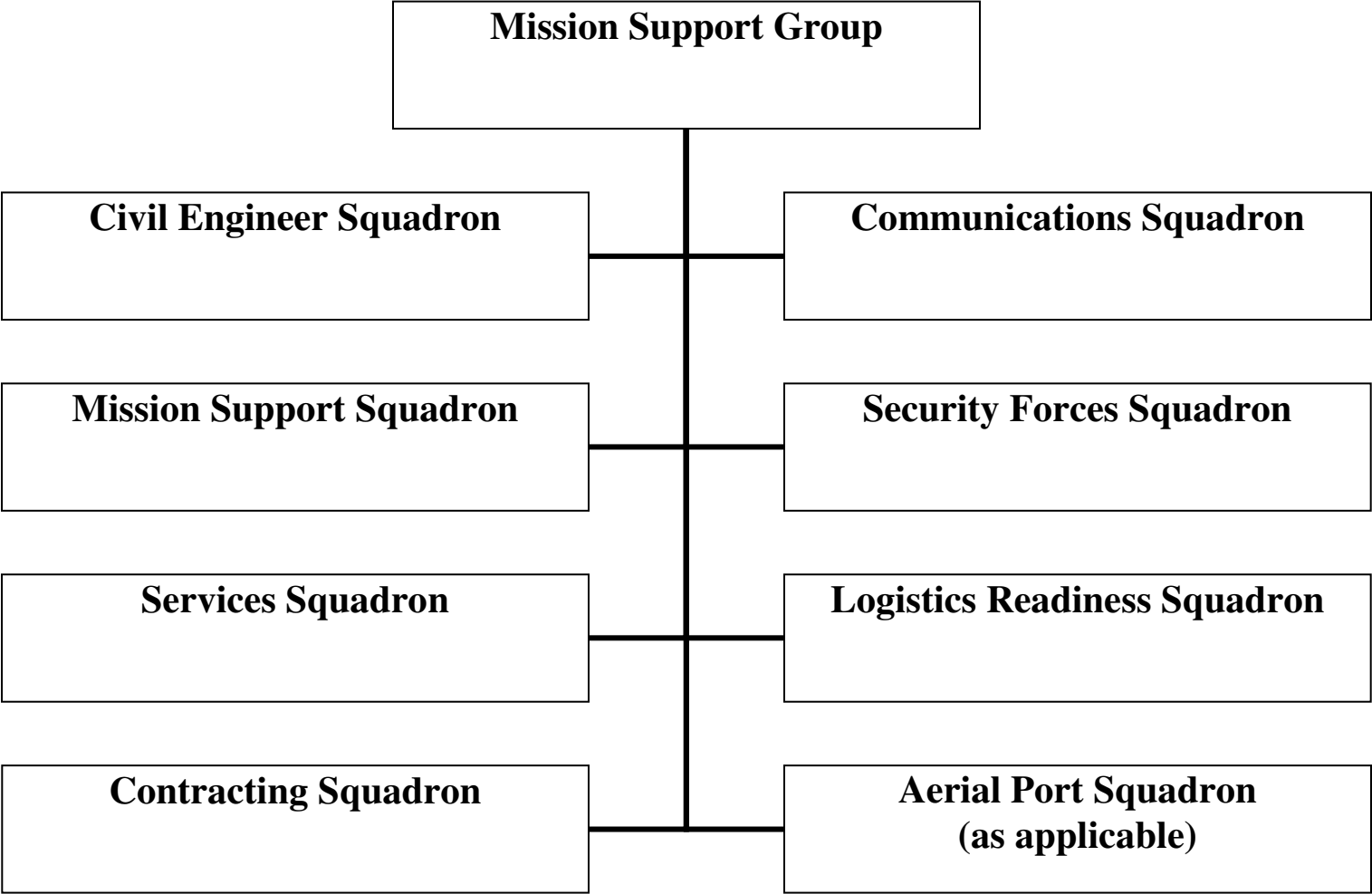
Finally, it is recommended that future researchers investigate the responses to the open-ended questions. The responses were overwhelmingly negative concerning the effectiveness of the technical school and further investigation into the reasons for such responses as well as the motivation for writing those responses may be beneficial future research. The research could determine what changes might be made to the curriculum based on these responses.

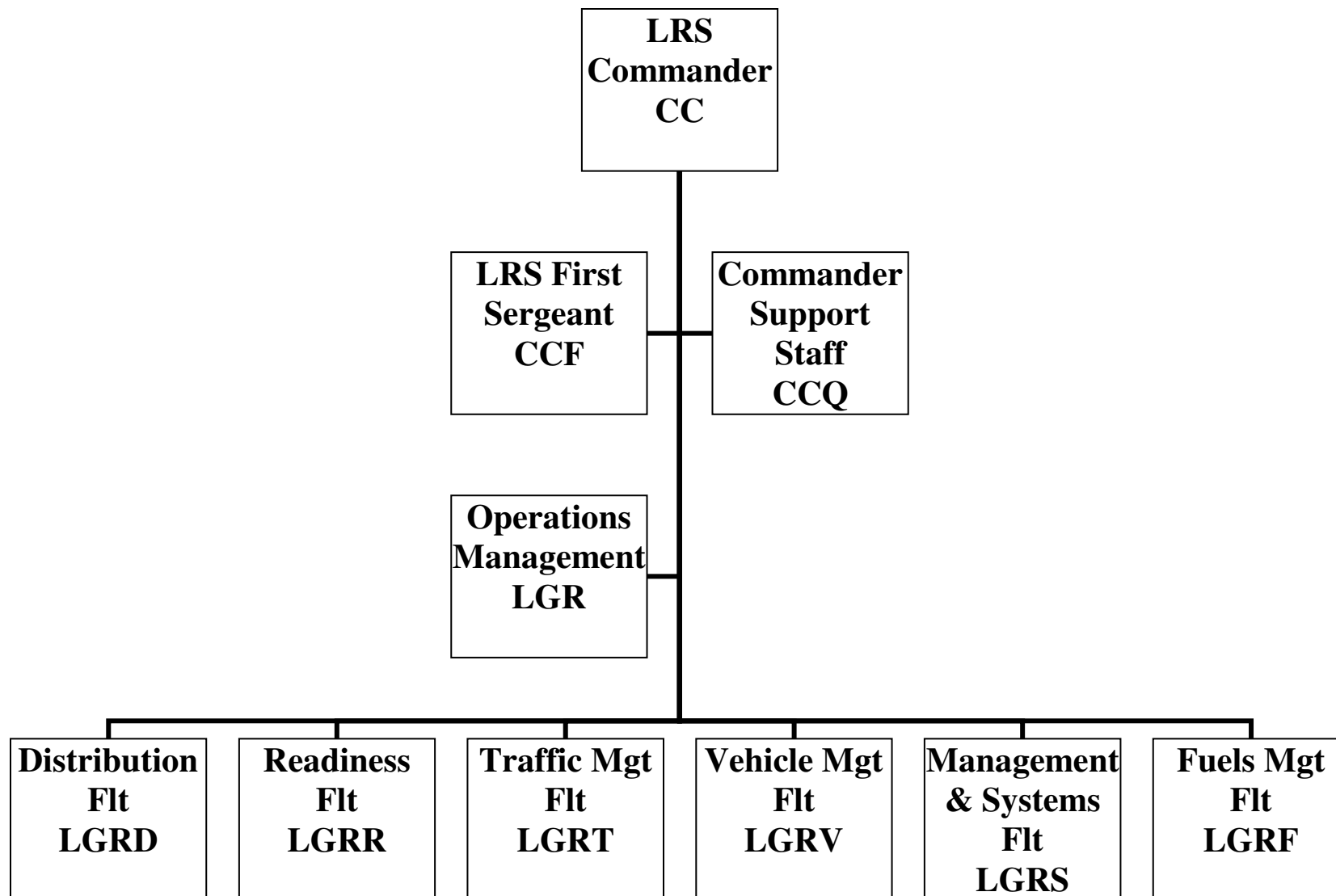
Conclusions

This research has helped build support for existing theories of the influences on training transfer by expanding into a military context and further, providing a unique opportunity to study these theories in a new training program within the military. The model and results provide insight to the attitudes and beliefs of recent LRO technical school graduates about LRO training transfer. Training transfer is an important part the learning process because it enables the information taught to be utilized back on the job. If organizations such as the USAF and LR career field do not ensure that a trainee is transferring training back to the job then the training is wasteful not only to the trainee, but to the organization for which the trainee is expected to work. Identifying influences on training transfer and exploiting those influences to the trainees' advantage may provide avenues for ensuring an LRO technical school graduate will be able to transfer what he/she learned at the LRO technical school back to the job.

Results of this study suggest that certain constructs such as training attitudes, organizational commitment, pretraining motivation, and support for learning and training transfer are pertinent influences on training transfer. The modified final model presented a more completely supported version of the relationships between the influences and training transfer. Identifying these influences on training transfer may prove to be beneficial in that organizations may be able to positively affect trainees' attitudes and beliefs, thus increasing training transfer.


Appendix A: MSG and LRS Organizational Charts (Department of the Air Force, 2002b)





Appendix B: Screen Shots of the Web-based Survey

AIR FORCE INSTITUTE OF TECHNOLOGY



An Assessment of Influences on Perceived Training Transfer

Survey Control Number: Air Force SCN 04-110

Privacy Notice

The following information is provided as required by the Privacy Act of 1974:

Purpose: The purpose of this research is to assess how influences/attitudes/beliefs of recent Logistics Readiness Officer (LRO) technical school graduates influence perceived transfer of training back to the job.

Participation: We would greatly appreciate your participation in our data collection effort. Your participation is COMPLETELY VOLUNTARY. Your decision to not participate or withdrawal from participation will not jeopardize your relationship with the Air Force Institute of Technology, the U.S. Air Force, or the Department of Defense.

Confidentiality: We ask for some demographic information in order to interpret results more accurately. ALL ANSWERS ARE ANONYMOUS. No one other than the research team will see your completed questionnaire. Findings will be reported at the group level only. Reports summarizing trends in large groups may be published.

Instructions

- Base your answers on your own thoughts & experiences
- Be sure to select the correct option button when asked because when you move on you cannot come back

Contact information: If you have any questions or comments about the survey, contact 1st Lt Sarah Hobbs at the telephone numbers, fax, mailing addresses, or e-mail addresses listed below.

1st Lt Sarah Hobbs
AFIT/ENV BLDG 641 / Room 202L
2950 Hobson Way
Wright-Patterson AFB OH 45433-7765
Email: sarah.hobbs@afit.edu
Advisor: summer.bartczak@afit.edu
Phone: DSN 785-3636x4826, commercial (937) 255-3636x4826
Fax: DSN 986-4699; commercial (937) 656-4699

Start Survey

Notice and Consent Banner:
Use of this DoD computer system, authorized or unauthorized, constitutes consent to monitoring of this system. Unauthorized use may subject you to criminal prosecution. Evidence of unauthorized use collected during monitoring may be used for administrative, criminal, or other adverse action. Use of this system constitutes consent to monitoring for these purposes.

[Read the Privacy and Security Notice](#)

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AFTT SURVEY

An Assessment of Influences on Perceived Training Transfer

Section I: Training Reputation

I would like to ask you some questions relating to your expectations of the Logistics Readiness Officer (LRO) Technical School PRIOR TO ATTENDING THE COURSE. Please use the following scale to indicate the extent to which you agree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 |
|-------------------|----------|---------|-------|----------------|
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

- 1 The overall effectiveness of the LRO career field would increase if most supervisors and managers took this training course.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- 2 I consider DoD training (e.g., PME such as ALS, NCOA, ASBC, SOS, etc.) to be of the highest quality.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- 3 LRO course trainers are very effective.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- 4 LRO training courses are very useful.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- 5 LRO training provides most of the skills critical for success in the LRO career field.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Next Section

Section II: Intrinsic Incentives

I would like to ask you some questions relating to the extent to which training meets your underlying personal needs or provides you with growth opportunities. Please use the following scale to indicate the extent to which you agree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 |
|-------------------|----------|---------|-------|----------------|
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

6 I attend training because it provides me with an opportunity to grow as a person.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

7 I attend training because it allows me to assume greater management responsibilities.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

8 I attend training because it enables me to become a more productive and efficient supervisor/manager.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

9 I attend training because it enables me to be a better role model for my subordinates.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

10 I attend training because the skills I learn in training help reduce my job-related stress.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

11 I attend training because it provides me with a greater sense of self-worth.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

12 I attend training because it provides me with skills that allow me to be more effective on the job.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

13 I attend training because it allows me to correct difficulties I am having on the job.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

14 I attend training because it provides me with an opportunity to interact with other managers and supervisors.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[Next Section](#)

Section III: Compliance

I would like to ask you some questions relating to how you generally feel about taking training because it is required. Please use the following scale to indicate the extent to which you agree with each of the following statements.

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

15 I attend training because it is required by my supervisor.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

16 I attend training because it is mandated by the Air Force.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

17 I feel LRO training should be mandatory.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

18 I feel that mandatory training is a good thing.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[Next Section](#)

AFT SURVEY

An Assessment of Influences on Perceived Training Transfer

Section IV: Organizational Commitment

I would like to understand how you generally feel about your commitment to the United States Air Force. Organizational commitment is defined as the relative strength of an individual's identification with and involvement in a particular organization. Please use the following scale to indicate the extent to which you agree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 |
|-------------------|----------|---------|-------|----------------|
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

19 I am willing to put in a great deal of effort beyond that normally expected in order to help the Air Force be successful.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

20 I "talk up" the Air Force to my friends as a great organization to work for.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

21 I find that my values and the Air Force's values are very similar.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

22 For me, the Air Force is the best of all possible organizations to work for.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[Next Section](#)



An Assessment of Influences on Perceived Training Transfer

Section V: Subordinate Support

I would like to ask you some questions regarding the support you receive from your subordinates. A supportive subordinate is defined as one who provides you with opportunities to use the knowledge acquired in LRO training and reinforcement for practicing that knowledge. Please use the following scale to indicate the extent to which you agree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 |
|-------------------|----------|---------|-------|----------------|
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

- 23 My subordinates allow me to get accustomed to using my new LRO training skills on the job.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- 24 My subordinates accept me making mistakes on the job as a necessary part of my trying out new LRO training skills.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- 25 My subordinates offer me constructive feedback when I use new skills and behaviors learned in LRO training.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- 26 My subordinates believe that LRO training is an important use of my time.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[Next Section](#)

Section VI: Supervisor Support

I would like to ask you some questions regarding the support you receive from your supervisor. A supportive supervisor is defined as one who provides you with opportunities to use the knowledge acquired in LRO training and reinforcement for practicing that knowledge. Please use the following scale to indicate the extent to which you agree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 |
|-------------------|----------|---------|-------|----------------|
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

27 My supervisor helps me when I ask him/her for advice about how to use the skills taught in LRO training.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

28 My supervisor is tolerant of changes that I initiate as a result of learning new LRO training skills.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

29 My supervisor offers me opportunities to use new skills I learned in LRO training.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

30 My supervisor gives me constructive feedback when I try out new skills or behaviors learned in LRO training.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

31 My supervisor rewards me for using new skills on the job that I learned in LRO training.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

32 My supervisor believes that LRO training is important and s/he attends relevant courses.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

33 My supervisor actively practices those skills taught in LRO training courses.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

34 My supervisor meets with me before I attend LRO training to set goals for my performance after training.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

35 My supervisor meets with me after completing LRO training to discuss how I can use my new training skills.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

36 My supervisor would still allow me to attend LRO training as scheduled if a last minute crisis arose.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[Next Section](#)

Section VII: Pretraining Motivation

I would like to ask you some questions about your motivation prior to accomplishing the LRO training. Please use the following scale to indicate the extent to which you agree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 |
|-------------------|----------|---------|-------|----------------|
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

37 If I have trouble understanding the material presented in a training program, I try harder.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

38 I get more out of training programs than most of my peers.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

39 I look forward to actively participating in training programs.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

40 The opportunity to acquire new skills appeals to me.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

41 I try to learn as much as I can from training programs.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

42 I make a special effort to complete all course assignments during training courses.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

43 I get really involved in learning the material presented in training courses.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

44 I use my own time to prepare for training courses by reading, practicing skills, completing assignments, etc.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

45 Doing well in training programs is important to me.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[Next Section](#)

Section VIII: Perceived Training Transfer

I would like to ask you some questions regarding some desirable outcomes as they relate to your current job that resulted from knowledge and skills derived from the LRO training. Please use the following scale to indicate the extent to which you agree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 |
|-------------------|----------|---------|-------|----------------|
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

46 I am able to transfer the skills learned in LRO training courses back to my actual job.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

47 Supervisors, peers, or subordinates have told me that my job behavior has improved following the LRO training course.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

48 I have changed my job behavior in order to be consistent with material taught in the LRO training course.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

49 My actual job performance has improved due to the skills that I learned in the LRO training course.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

50 The productivity of my subordinates has improved due to the skills that I learned in the LRO training course.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

51 Absenteeism in my group has decreased due to the skills that I developed in the LRO training course.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

52 Turnover in my group has decreased due to the skills that I developed in the LRO training course.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

53 Morale of my work group is higher due to the skills that I developed in the LRO training course.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

54 My subordinates are more committed to the mission of the Air Force and logistics due to the skills that I developed in the LRO training course.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[Next Section](#)

Section IX: Transfer Enhancing Activities

Each statement below describes a characteristic of the LRO training you have received which may have influenced how effective you perceived the training to be. Please use the following scale to indicate the extent to which you agree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 |
|-------------------|----------|---------|-------|----------------|
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

55 During LRO training, the instructors explained why things worked the way they did.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

56 During LRO training, the instructors explained why it was necessary to do things a certain way.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

57 During LRO training, the instructors never told us why, just told us to do it.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

58 The LRO training we received really made things clear as to why things worked the way they did.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

59 During LRO training, the instructors taught us things to look for to make sure we were doing the job correctly.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

60 During LRO training, the instructors taught us check-points so that we could be sure we were doing the job correctly.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

61 It would have helped us to remember things in LRO training if the instructors had given us some memory aids, such as check lists, color-coded diagrams, etc.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

62 Job aids are available on the job to support what LROs learned in technical school.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

63 During LRO training, we couldn't tell whether or not we made mistakes.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Continue

Section IX: Transfer Enhancing Activities Continued

Each statement below describes a characteristic of the LRO training you have received which may have influenced how effective you perceived the training to be. Please use the following scale to indicate the extent to which you agree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 |
|-------------------|----------|---------|-------|----------------|
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

64 During LRO training, we were taught how to recognize our mistakes as we made them.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

65 During LRO training, the instructors discussed the possibility of no supervisory support for our training when we were on the job.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

66 During LRO training, we talked about situations that might prevent us from using our new skills and ways to deal with those situations.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

67 During LRO training, we talked about what to do if people at our duty station told us to do the job in a different way.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

68 During LRO training, we discussed problems we might encounter at our duty station when we first used LRO training.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

69 During LRO training, we discussed how other LROs attitudes toward the technical school might affect our job performance.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

70 During LRO training, we discussed how our supervisor's attitudes toward our training might affect our job performance.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

71 During LRO training, we talked about how to develop good work habits, so we would remember what we were taught when we were on the job.

| 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[Next Section](#)

Section X: Task Constraints

Please use the following scale to indicate how often each of the following factors has hampered your ability to apply new skills that you have learned in LRO training back to your job. **NOTE THE SCALE HAS CHANGED TO A FREQUENCY SCALE.**

| 1 | 2 | 3 | 4 | 5 |
|---------------|------------|--------------|--------|-------|
| Almost Always | Frequently | Occasionally | Seldom | Never |

NOTE THE SCALE HAS CHANGED TO A FREQUENCY SCALE

72 Unclear task assignments or instructions.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

73 Lack of necessary tools, equipment, mechanical devices and/or material aids.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

74 Inability to obtain the raw materials, parts, or supplies .

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

75 Inadequate financial resources.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

76 Insufficient personnel.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

77 Uncooperative coworkers and/or poor relationships between people in different departments/divisions.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

78 Insufficient time to produce the quality or quantity of work required.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

79 Poor environmental conditions (e.g., cold, hot, noisy, frequent interruptions).

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

80 Uncooperative supervisor or productivity pressures from your supervisor .

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

81 Inabilities of subordinates or coworkers to take on additional work or responsibilities.

| | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Next Section

AFTI SURVEY

An Assessment of Influences on Perceived Training Transfer

Section XI: Prior Job Knowledge

82 How many years of experience specific to logistics have you had in a civilian capacity?

Years Months

83 How many years of experience specific to logistics have you had in a military capacity?

Years Months

Section XII: Demographic Information

This section elicits key demographic information that will be used in conjunction with the survey responses. Respond to each item by WRITING in the information requested or FILLING in the corresponding circles that best describe you.

84 What is your age? Years

85 What is your gender?

- ☐ Male
☐ Female

86 What is your HIGHEST education level?

- ☐ Bachelor's Degree
☐ Bachelor's Degree plus
☐ Graduate Degree
☐ Graduate Degree plus
☐ Some doctorate work completed
☐ Doctorate
☐ Post Doctorate
☐ Professional School Degree (MD, JD, DVM)

87 What is your current rank?

- ☐ O-1 ☐ O-1E ☐ O-2 ☐ O-2E
☐ O-3 ☐ O-3E ☐ O-4 ☐ O-5 ☐ O-6

88 What is your Total Active Federal Military Service (TAFMS) (i.e., all periods of active military service in commissioned officer or enlisted status) ?

Years Months

89 What is your Total Active Federal Commissioned Service (TAFCS) (i.e., all periods of active commissioned service) ?

Years Months

90 What is your total time-in-grade?

Years Months

91 If you have any final comments or concerns about LRO training or this survey, please write them in the space provided. If your comments relate to specific questions on this survey, please make a note of the question number beside your comment.

Next Section

Section XIII: Feedback

If you are interested in getting feedback on our research results, please provide us with the following personal information so we can reach you at a later date:

Name:

Address:

Phone (DSN):

Phone (COMM):

Email:

[Finish Survey](#)

Thank you for completing this survey.

All information is strictly confidential

Appendix C: Instructions by construct for Answering the Web-based Survey

Section I: Training Reputation

I would like to ask you some questions relating to your expectations of the LRO Technical School PRIOR TO ATTENDING THE COURSE. Please use the following scale to indicate the extent to which you agree with each of the following statements.

Section II: Intrinsic Incentives

I would like to ask you some questions relating to the extent to which training meets your underlying personal needs or provides you with growth opportunities. Please use the following scale to indicate the extent to which you agree with each of the following statements.

Section III: Compliance

I would like to ask you some questions relating to how you generally feel about taking training because it is required. Please use the following scale to indicate the extent to which you agree with each of the following statements.

Section IV: Organizational Commitment

I would like to understand how you generally feel about your commitment to the United States Air Force. Organizational commitment is defined as the relative strength of an individual's identification with and involvement in a particular organization. Please use the following scale to indicate the extent to which you agree with each of the following statements.

Section V: Subordinate Support

I would like to ask you some questions regarding the support you receive from your subordinates. A supportive subordinate is defined as one who provides you with opportunities to use the knowledge acquired in LRO training and reinforcement for practicing that knowledge. Please use the following scale to indicate the extent to which you agree with each of the following statements.

Section VI: Supervisor Support

I would like to ask you some questions regarding the support you receive from your supervisor. A supportive supervisor is defined as one who provides you with opportunities to use the knowledge acquired in LRO training and reinforcement for practicing that knowledge. Please use the following scale to indicate the extent to which you agree with each of the following statements.

Section VII: Pretraining Motivation

I would like to ask you some questions about your motivation prior to accomplishing the LRO training. Please use the following scale to indicate the extent to which you agree with each of the following statements.

Section VIII: Perceived Training Transfer

I would like to ask you some questions regarding some desirable outcomes as they relate to your current job that resulted from knowledge and skills derived from the LRO training. Please use the following scale to indicate the extent to which you agree with each of the following statements.

Section IX: Transfer Enhancing Activities

Each statement below describes a characteristic of the LRO training you have received which may have influenced how effective you perceived the training to be. Please use the following scale to indicate the extent to which you agree with each of the following statements.

Section X: Task Constraints

Please use the following scale to indicate how often each of the following factors has hampered your ability to apply new skills that you have learned in LRO training back to your job. NOTE THE SCALE HAS CHANGED TO A FREQUENCY SCALE.

Section XI: Prior Job Knowledge

No Instructions

Section XII: Demographic Information

This section elicits key demographic information that will be used in conjunction with the survey responses. Respond to each item by **WRITING** in the information requested or **FILLING** in the corresponding circles that best describe you.

Appendix D: List of the Original Survey Questions and Modified Survey Questions

| Construct | Original Question | Modified Question |
|---|---|--|
| Training Reputation (Facteau et al., 1995) | The overall effectiveness of state government would increase if most supervisors and managers too [State] training courses. | The overall effectiveness of the LRO career field would increase if most supervisors and managers took this training course. |
| | Most supervisor and managerial training courses are of the highest quality. | I consider DoD training (e.g. PME such as ALS, NCOA, ASBC, SOS, etc.) to be of the highest quality. |
| | [Insert organization name]-employed trainers are very effective. | LRO course trainers are very effective. |
| | [Insert organization name] training courses are very useful. | LRO training courses are very useful. |
| | [Insert organization name] training provides most of the skills critical for success in state government. | LRO training provides most of the skills critical for success in the LRO career field. |
| Intrinsic Incentives (Facteau et al., 1995) | I take training because it provides me with an opportunity to grow as a person. | I attend training because it provides me with an opportunity to grow as a person. |
| | I take training because it allows me to assume greater management responsibilities. | I attend training because it allows me to assume greater management responsibilities. |
| | I take training because it enables me to become a more productive and efficient supervisor/manager. | I attend training because it enables me to become a more productive and efficient supervisor/manager. |
| | I take training because it enables me to be a better role model for my subordinates. | I attend training because it enables me to be a better role model for my subordinates. |
| | I take training because the skills I learn in training help reduce my job-related stress. | I attend training because the skills I learn in training help reduce my job-related stress. |
| | I take training because it provides me with a greater sense of self-worth. | I attend training because it provides me with a greater sense of self-worth. |
| | I take training because it provides me with skills that allow me to be more effective on the job. | I attend training because it provides me with skills that allow me to be more effective on the job. |

| | | |
|--|---|---|
| | I take training because it allows me to correct difficulties I am having on the job. | I attend training because it allows me to correct difficulties I am having on the job. |
| | I take training because it provides me with an opportunity to interact with other managers and supervisors. | I attend training because it provides me with an opportunity to interact with other managers and supervisors. |
| Compliance (Facteau et al., 1995) | I take training because my supervisor requires me. | I attend training because it is required by my supervisor. |
| | I take training because it is mandated in this organization. | I attend training because it is mandated by the Air Force. |
| | | I feel LRO training should be mandatory. |
| | | I feel that mandatory training is a good thing. |
| Organizational Commitment (Facteau et al., 1995) | I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful. | I am willing to put in a great deal of effort beyond that normally expected in order to help the Air Force be successful. |
| | I talk up this organization to my friends as a great organization to work for. | I “talk up” the Air Force to my friends as a great organization to work for. |
| | I find that my values and the organization's values are very similar. | I find that my values and the Air Force’s values are very similar. |
| | For me, this is the best of all possible organizations to work for. | For me, the Air Force is the best of all possible organizations to work for. |
| Subordinate Support (Facteau et al., 1995) | My subordinates allow me to get accustomed to using my new training skills on the job. | My subordinates allow me to get accustomed to using my new LRO training skills on the job. |
| | My subordinates accept me making mistakes on the job as a necessary part of my trying out new training skills. | My subordinates accept me making mistakes on the job as a necessary part of my trying out new LRO training skills. |
| | My subordinates offer me constructive feedback when I use new skills and behaviors learned in training. | My subordinates offer me constructive feedback when I use new skills and behaviors learned in LRO training. |

| | | |
|---|---|--|
| | My subordinates believe that training is an important use of my time. | My subordinates believe that LRO training is an important use of my time. |
| Supervisor Support (Facteau et al., 1995) | My supervisor helps me when I ask him/her for advice about how to use the skills taught in training. | My supervisor helps me when I ask him/her for advice about how to use the skills taught in LRO training. |
| | My supervisor is tolerant of changes that I initiate as a result of learning new training skills. | My supervisor is tolerant of changes that I initiate as a result of learning new LRO training skills. |
| | My supervisor offers me opportunities to use new skills I learned in training. | My supervisor offers me opportunities to use new skills I learned in LRO training. |
| | My supervisor gives me constructive feedback when I try out new skills or behaviors learned in training. | My supervisor gives me constructive feedback when I try out new skills or behaviors learned in LRO training. |
| | My supervisor rewards me for using new skills on the job that I learned in training. | My supervisor rewards me for using new skills on the job that I learned in LRO training. |
| | My supervisor believes that training is important and s/he attends relevant courses. | My supervisor believes that LRO training is important and s/he attends relevant courses. |
| | My supervisor actively practices those skills taught in [organization] training courses. | My supervisor actively practices those skills taught in LRO training courses. |
| | Before I attend training, my supervisor meets with me to set goals for my performance after training. | My supervisor meets with me before I attend LRO training to set goals for my performance after training. |
| | After completing training, my supervisor meets with me to discuss how I can use my new training skills. | My supervisor meets with me after completing LRO training to discuss how I can use my new training skills. |
| | If a last minute departmental crisis arose, my supervisor would still allow me to attend training as scheduled. | My supervisor would still allow me to attend LRO training as scheduled if a last minute crisis arose. |

| | | |
|--|---|---|
| Pretraining Motivation (Facteau et al., 1995) | If I have trouble understanding the material presented in a training program, I try harder. | If I have trouble understanding the material presented in a training program, I try harder. |
| | I get more out of training programs than most of my peers. | I get more out of training programs than most of my peers. |
| | I look forward to actively participating in training programs. | I look forward to actively participating in training programs. |
| | The opportunity to acquire new skills appeals to me. | The opportunity to acquire new skills appeals to me. |
| | I try to learn as much as I can from training programs. | I try to learn as much as I can from training programs. |
| | I make a special effort to complete all course assignments during training courses. | I make a special effort to complete all course assignments during training courses. |
| | I get really involved in learning the material presented in training courses. | I get really involved in learning the material presented in training courses. |
| | I use my own time to prepare for training courses by reading, practicing skills, completing assignments, etc. | I use my own time to prepare for training courses by reading, practicing skills, completing assignments, etc. |
| Perceived Training Transfer (Facteau et al., 1995) | Doing well in training programs is important to me. | Doing well in training programs is important to me. |
| | I am able to transfer the skills learned in training courses back to my actual job. | I am able to transfer the skills learned in LRO training courses back to my actual job. |
| | Supervisors, peers, or subordinates have told me that my behavior has improved following a training course. | Supervisors, peers, or subordinates have told me that my job behavior has improved following the LRO training course. |
| | I have changed my job behavior in order to be consistent with material taught in training courses. | I have changed my job behavior in order to be consistent with material taught in the LRO training course. |

| | | |
|---|---|---|
| | My actual job performance has improved due to the skills that I learned in training courses. | My actual job performance has improved due to the skills that I learned in the LRO training course. |
| | The productivity of my subordinates has improved due to the skills that I learned in training courses. | The productivity of my subordinates has improved due to the skills that I learned in the LRO training course. |
| | Absenteeism in my group has decreased due to the skills that I developed in training courses. | Absenteeism in my group has decreased due to the skills that I developed in the LRO training course. |
| | Turnover in my group has decreased due to the skills that I developed in training courses. | Turnover in my group has decreased due to the skills that I developed in the LRO training course. |
| | Morale of my work group is higher due to the skills that I developed in training courses. | Morale of my work group is higher due to the skills that I developed in the LRO training course. |
| | My subordinates are more committed to the mission of [organization] due to the skills that I developed in training courses. | My subordinates are more committed to the mission of the Air Force and logistics due to the skills that I developed in the LRO training course. |
| Transfer Enhancing Activities (Thayer & Teachout, 1995) | During training, instructors explained why things worked the way they did. | During LRO training, the instructors explained why things worked the way they did. |
| | During training, they explained why it was necessary to do things a certain way. | During LRO training, the instructors explained why it was necessary to do things a certain way. |
| | During training, they never told us why, just told us to do it. (Reversed coded) | During LRO training, the instructors never told us why, just told us to do it. |
| | The training we received really made things clear as to why things worked the way they did. | The LRO training we received really made things clear as to why things worked the way they did. |
| | During training, they taught us things to look for to make sure we were doing the job correctly. | During LRO training, the instructors taught us things to look for to make sure we were doing the job correctly. |

| | | |
|--|--|--|
| | During training, they taught us check-points so that we could be sure we were doing the job correctly. | During LRO training, the instructors taught us check-points so that we could be sure we were doing the job correctly. |
| | It would have helped us to remember things in training if they had given us some memory aids, such as check lists, color-coded diagrams, etc. | It would have helped us to remember things in LRO training if the instructors had given us some memory aids, such as check lists, color-coded diagrams, etc. |
| | Job aids are available on the job to support what airmen learned in tech training. | Job aids are available on the job to support what LROs learned in technical school. |
| | During training, we couldn't tell whether or not we made mistakes. (Reversed coded) | During LRO training, we couldn't tell whether or not we made mistakes. |
| | During training, we were taught how to recognize our mistakes as we made them. | During LRO training, we were taught how to recognize our mistakes as we made them. |
| | During training, the instructors discussed the possibility of no supervisory support for out training when we were on the job. (Reverse coded) | During LRO training, the instructors discussed the possibility of no supervisory support for our training when we were on the job. |
| | During training, we talked about situations that might prevent us from using our new skills and ways to deal with those situations. | During LRO training, we talked about situations that might prevent us from using our new skills and ways to deal with those situations. |
| | During training, we talked about what to do if people at our new duty station told us to do the job a different way. | During LRO training, we talked about what to do if people at our duty station told us to do the job in a different way. |
| | During training, we discussed problems we might encounter at our duty station when we first used tech training. | During LRO training, we discussed problems we might encounter at our duty station when we first used LRO training. |

| | | |
|---|---|---|
| | During training, we discussed how other airmen's attitudes toward tech training might affect our job performance. | During LRO training, we discussed how other LROs attitudes toward the technical school might affect our job performance. |
| | During training, we discussed how our supervisors' attitudes toward our training might affect our job performance | During LRO training, we discussed how our supervisor's attitudes toward our training might affect our job performance. |
| | During training, we talked about how to develop good work habits, so we would remember what we were taught when we were on the job. | During LRO training, we talked about how to develop good work habits, so we would remember what we were taught when we were on the job. |
| Task Constraints (Facteau et al., 1995) | Unclear task assignments or instructions. | Unclear task assignments or instructions. |
| | Lack of necessary tools, equipment, mechanical devices and/or material aids. | Lack of necessary tools, equipment, mechanical devices and/or material aids. |
| | Inability to obtain the raw materials, parts, or supplies. | Inability to obtain the raw materials, parts, or supplies. |
| | Inadequate financial resources. | Inadequate financial resources. |
| | Insufficient personnel. | Insufficient personnel. |
| | Uncooperative coworkers and/or poor relationships between people in different departments/divisions. | Uncooperative coworkers and/or poor relationships between people in different departments/divisions. |
| | Insufficient time to produce the quality or quantity of work required. | Insufficient time to produce the quality or quantity of work required. |
| | Poor environmental conditions (e.g., cold, hot, noisy, frequent interruptions). | Poor environmental conditions (e.g., cold, hot, noisy, frequent interruptions). |
| | Uncooperative supervisor or productivity pressures from your supervisor. | Uncooperative supervisor or productivity pressures from your supervisor. |
| | Inabilities of subordinates or coworkers to take on additional work or responsibilities. | Inabilities of subordinates or coworkers to take on additional work or responsibilities. |

| | | |
|------------------------------|--|--|
| Prior Job Knowledge | | How many years of experience specific to logistics have you had in a civilian capacity? _____yrs _____ months |
| | | How many years of experience specific to logistics have you had in a military capacity? _____yrs _____ months |
| Demographic questions | | What is your age? _____ years |
| | | What is your gender? Male Female |
| | | What is your HIGHEST education level? Bachelor's Degree Bachelor's Degree plus Graduate Degree Graduate Degree plus Some doctorate work completed Doctorate Post Doctorate Professional School Degree (MD, JD, DVM) |
| | | What is your current rank? <input type="radio"/> O-1 <input type="radio"/> O-1E <input type="radio"/> O-2 <input type="radio"/> O-2E <input type="radio"/> O-3 <input type="radio"/> O-3E <input type="radio"/> O-4 <input type="radio"/> O-5 <input type="radio"/> O-6 |
| | | What is your Total Active Federal Military Service (TAFMS) (i.e. all periods of active military service in commissioned officer or enlisted status)? Years _____ Months _____ |

| | | |
|-----------------------------------|--|---|
| | | <p>What is your Total Active Federal Commissioned Service (TAFCS) (i.e. all periods of active commissioned service)? Years _____ Months _____</p> <p>What is your total time-in-grade? Years _____ Months _____</p> |
| <p>Open-ended question</p> | | <p>If you have any final comments or concerns about LRO training, or this survey, please write them in the space provided. If your comments relate to specific questions on this survey, please make a note of the question number beside your comment.</p> |

Appendix E: Copies of the E-mails Sent to Participants

Initial E-mail

Logistics Readiness Officers:

You have been selected to participate in a study being conducted by the Air Force Institute of Technology, Wright-Patterson AFB, OH.

This survey is designed for active duty graduates of the newly combined LRO technical school. The results of this survey will provide a snapshot of what LROs believe may influence technical school training and the ability to use that training back on the job. Overall, the study will address influences on technical school training effectiveness and may influence technical school curriculum developments. Your contribution will make a difference!

The study consists of a web-based survey that will take approximately 25-30 minutes to complete. The survey will be available for the next 3 weeks. Your participation in this study is voluntary and completely confidential. Your participation in the survey, as well as your answers, will be kept confidential. The survey is located at the link below. If you have any questions please feel free to contact 1st Lt Sarah Hobbs at sarah.hobbs@afit.edu.

If you know of any other LROs who qualify to take this survey, please feel free to forward them this e-mail.

Thank you in advance for your participation.

<http://en.afit.edu/Surveys/shobbsSurvey/>

This study has been approved by the HQ AFPC Survey Branch
and assigned Air Force Survey Control Number 04-110.

v/r
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Halfway and Final Reminder e-mail

Logistics Readiness Officers:

Thank you to all who have already taken my survey. Your help with my research is greatly appreciated.

To those who have not yet taken the survey or have chosen not to, I would like you to reconsider. This survey is of great importance to you and the LRO career field. It's a way to make a difference and possibly even make a change in our career field.

The survey will on take approximately 25-30 minutes and it will be available until 10 Jan 2005. Your participation in this study is voluntary and completely confidential. Your participation in the survey, as well as your answers, will be kept confidential. The survey is located at the link below. If you have any questions please feel free to contact 1st Lt Sarah Hobbs at sarah.hobbs@afit.edu.

This survey is designed for active duty graduates of the newly combined LRO technical school. The results of this survey will provide a snapshot of what LROs believe may influence technical school training and the ability to use that training back on the job. Overall, the study will address influences on technical school training effectiveness and may influence technical school curriculum developments. Your contribution will make a difference!

Thank you in advance for your participation.

<http://en.afit.edu/Surveys/shobbsSurvey/>

This study has been approved by the HQ AFPC Survey Branch
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v/r
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Appendix F: Definitions of the 11 Constructs Used in the Model of Training Transfer Influences

| Measure | Definition |
|-------------------------------|--|
| Training Reputation | An expectation about the quality of the course and its job relevance |
| Intrinsic Incentives | The extent to which training meets internal needs or provides trainees with growth opportunities |
| Compliance | The extent to which training is taken because it is mandated by the organization |
| Prior Job Knowledge | Set of skills or knowledge that were already known prior to attending training |
| Org. Commitment | Relative strength of an individual's identification with and involvement in a particular org. |
| Task Constraints | Factors that may hamper a trainees ability to apply new skills learned in training back to their job |
| Subordinate Support | The extent to which subordinates support the trainee through opportunities and reinforcement for practicing skills or using knowledge acquired in training |
| Supervisor Support | The extent to which a supervisor supports the trainee through opportunities and reinforcement for practicing skills or using knowledge acquired in training |
| Transfer Enhancing Activities | Characteristics of training which may influence how effective the trainee perceives the training to be |
| Pretraining Motivation | The extent to which trainees were motivated to attend training and learn from training prior to attending |
| Perceived Training Transfer | The extent to which desirable outcomes have occurred as a result of the trainees ability to transfer the skills they have learned in the training back to their jobs |

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Vita

First Lieutenant Sarah E. Hobbs was born in Manassas, Virginia and graduated from Osbourn High School in 1997. She then entered undergraduate studies at the University of Virginia, Charlottesville, Virginia and graduated with a Bachelor of Arts degree in Biology in 2001. Lieutenant Hobbs was commissioned into the United States Air Force as a second lieutenant in May 2001.

Lieutenant Hobbs' first assignment was to the 552d Air Control Wing (ACW), Tinker Air Force Base, Oklahoma, where she served as the Officer in Charge (OIC) of Mobility Readiness Spares Packages, Supply Flight, 552d Maintenance Operation Squadron, and OIC of Plans and Programs, Logistics Plans Flight, 552d Maintenance Operations Squadron.

After two years with the 552 ACW, she relocated to Wright-Patterson Air Force Base, Ohio, where she entered the Logistics Management program at the Graduate School of Engineering and Management, Air Force Institute of Technology. Upon graduation, she will be assigned to Headquarters Air Combat Command Logistics Directorate, Langley Air Force Base, Virginia.

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| 14. ABSTRACT Training transfer, which is the ability to utilize training back on the job, is an important issue for all organizations. Training transfer is also a concern within the Air Force, and specifically within the Logistics Readiness (LR) domain as the new LR career field and Logistics Readiness Officer (LRO) technical school mature. This research specifically investigates how influences/attitudes/beliefs of LRO technical school graduates regarding their training influence their perceptions about the transfer of such training back to the job. This study employs a survey-based methodology and the use of Structural Equation Modeling (SEM) for data analysis. The results of the research show that influences such as intrinsic incentives, organizational commitment, pretraining motivation, training reputation, subordinate/supervisor support, task constraints, and transfer enhancing activities have a significant relationship with training transfer. Not only does the research illuminate important influences on training transfer for the LRO, but may also aid in directed efforts to improve and enhance the LRO technical school curriculum and experience. This research has also helped build support for existing theories of the influences on training transfer by expanding into a military context and by providing a unique opportunity to study such theories within a new training program scenario. | | | | | |
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